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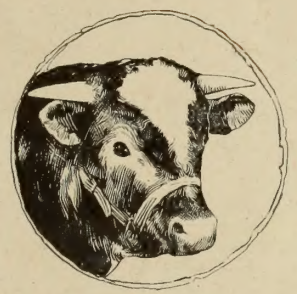
FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto, Canada

VOL. XII, No. 1 TORONTO, JANUARY 1, 1919 $1.50 Per Year 10 Cents Per Copy

Canada's Great Opportunity in Live Stock



The Dominion Department of Agriculture believes the time is opportune for the extension of our Canadian Live Stock Industry. The importance of this industry to Canada cannot be too strongly emphasized. Our continued prosperity agriculturally will depend to a greater degree than ever on our exports of beef, pork, cheese, butter and eggs.

The European herds of live stock have been seriously depleted. France is short nearly 8,000,000 head; Italy has had to slaughter breeding stock. The Germans not only swept Belgium bare but were forced to slaughter their own herds which have been decreased by probably 22,000,000 head of cattle and hogs. Ireland, which used to kill 18,000 bacon hogs a week, can now supply about 4,000 only. Denmark, which formerly shipped 50,000 hogs a week has had to decrease her herds by 1,873,000 below normal. In countries reporting, there is a shortage of 32,000,000 hogs in Europe. Of cattle, sheep and hogs there is an estimated combined shortage of not less than 115,005,000 animals. This is more than nine times the total of all the cattle, hogs and sheep at present in Canada.

Europe will rebuild her herds but it will require years. Cereal production can be increased more quickly than animal production, consequently the price of feed should decline more rapidly than the price of meats.

Arrangements for Marketing

At present, and for some months to come, all bacon and beef products for export are being taken over by the Allied Purchasing Commission at remunerative prices.

It is well-known that Canadian producers receive from one to two cents per pound more now for hog products than American producers.

It is anticipated that by the time the work of the Allied Purchasing Commission is concluded Canada will have an accredited agent in Great Britain to look after the marketing of Canadian agricultural products with particular reference to meat and dairy produce.

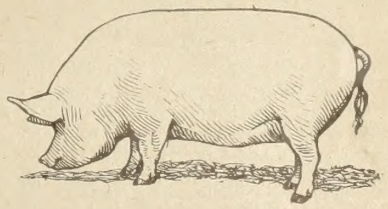
The European market is wide open for Canadian meat products and there is a warm spot in the British and Allied hearts for anything Canadian of good quality. The foundation herds in many European countries have been slaughtered but Canada has her herds intact and must not lose time in cultivating her export trade with Great Britain and Europe. Denmark, the most formidable competitor to Canada in the British bacon trade, is at present practically off the market; if the hog raisers of Canada "cinch" the British market now they will be able to hold it if we maintain the high quality of our product.

In 1916-17 Britain imported 1,261,082,032 pounds of hog products and 1,077,154,000 pounds of beef annually and of this only 130,304,900 pounds of hog products and 29,680,000 pounds of beef were sent from Canada. Britain's domestic supply of hogs is only 75% normal and owing to shortage of feed her farmers were obliged to kill off a large proportion of her hogs before Christmas.

Canada never had such a chance in the European market. We must aim high to supply the present demand and we must maintain quality in order to secure preference over all our competitors. Quantity is necessary but quality is absolutely essential.

Europe will require shipments of meat products far beyond the normal. If Canada is to take advantage of this opportunity all foundation stock must be conserved. But every man must figure out for himself how many animals he can feed and finish.

To secure and hold the British market alone means large returns. History and recent experience reveal the fact that permanent prosperity prevails in those countries where live stock is the basis of agriculture. Therefore, conserve the herds, improve the quality, finish thoroughly.



Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA, CANADA

THE CANADIAN BANK OF COMMERCE

Statement of the result of the business of the Bank for the year ending 30th November, 1918

Balance at credit of Profit and Loss Account brought forward from last year	$1,332,074.52
Amount recovered from over-appropriations	1,000,000.00
Net Profits for the year ending 30th November, after providing for all bad and doubtful debts	2,850,318.16
	$5,182,392.68

This has been appropriated as follows:

Dividends Nos. 124, 125, 126 and 127 at ten per cent. per annum		$1,500,000.00
Bonus of one per cent. payable 1st June		150,000.00
do do do 1st December		150,000.00
War tax on bank-note circulation to 30th November		150,000.00
Transferred to Pension Fund		85,000.00
Reserved for the cost of a proposed memorial to officers of the Bank who served in the great war, and of a history of the Bank		100,000.00
Transferred to Rest Account		1,500,000 00
Subscriptions:		
Canadian Patriotic Fund	$50,000.00	
Halifax Relief Fund	25,000.00	
The Navy League of Canada	10,000.00	
Y.M.C.A. Red Triangle Fund	10,000.00	
Sundry subscriptions	7,550.00	
		102,550.00
Balance carried forward		1,444,842.68
		$5,182,392.68

GENERAL STATEMENT

30th NOVEMBER, 1918

LIABILITIES

TO THE PUBLIC—		
Notes of the Bank in circulation		$ 31,583,694.68
Deposits not bearing interest	$151,010,570.57	
Deposits bearing interest, including interest accrued to date	202,148,245.47	
		353,158,816.04
Balances due to other Banks in Canada		104,106.35
Balances due to Banks and Banking Correspondents elsewhere than in Canada		10,322,592.58
Bills payable		118,347.00
Acceptances under Letters of Credit		13,048,927.03
		$408,336,483.68
TO THE SHAREHOLDERS—		
Dividends Unpaid		4,376.86
Dividend No. 127 and bonus, payable 1st December		525,000.00
Capital Paid up	$15,000,000.00	
Rest Account	15,000,000.00	
Balance of Profits as per Profit and Loss Account	1,444,842.68	
		31,444,842.68
		$440,310,703.22

ASSETS

Gold and Silver Coin Current on hand	$15,686,046.24		
Gold deposited in Central Gold Reserves	6,500,000.00	$22,186,046.24	
Dominion notes on hand	28,785,117.25		
Dominion Notes deposited in Central Gold Reserves	11,000,000.00	39,785,117.25	$61,971,163.49
Notes of other Banks		$ 2,293,472.00	
Cheques on other Banks		15,701,358.67	
Balances due by other Banks in Canada		100.62	
Balances due by Banks and Banking Correspondents elsewhere than in Canada		8,267,187.82	26,262,119.11
Dominion and Provincial Government Securities, not exceeding market value			36,165,259.20
British, Foreign and Colonial Public Securities and Canadian Municipal Securities			29,884,242.13
Railway and other Bonds, Debentures and Stocks, not exceeding market value			6,018,039.70
Call and Short Loans (not exceeding 30 days) in Canada on Bonds, Debentures and Stocks			13,843,130.58
Call and Short Loans (not exceeding 30 days) elsewhere than in Canada			28,018,919.10
Deposit with the Minister of Finance for the purposes of the Circulation Fund			856,108.55
			$203,018,981.86
Other Current Loans and Discounts in Canada (less rebate of interest)			199,672,294.63
Other Current Loans and Discounts elsewhere than in Canada (less rebate of interest)			17,617,641.44
Liabilities of Customers under Letters of Credit, as per contra			13,048,927.03
Overdue Debts (estimated loss provided for)			103,320.80
Real Estate other than Bank Premises (including the unsold balance of former premises of the Eastern Townships Bank)		$1,150,347.84	
Less balance of mortgage assumed		32,307.04	
			1,118,040.80
Mortgages on Real Estate sold by the Bank			237,681.64
Bank Premises at cost, less amounts written off			5,344,500.04
Other Assets not included in the foregoing			149,314.98
			$440,310,703.22

B. E. WALKER,
PRESIDENT

JOHN AIRD,
GENERAL MANAGER

Report of the Auditors to the Shareholders of the Canadian Bank of Commerce

In accordance with the provisions of sub-sections 19 and 20 of section 56 of the Bank Act, 1913, we report as follows:

We have audited the above Balance Sheet and compared it with the books and vouchers at Head Office and with the certified returns from the branches. We have obtained all the information and explanations that we have required, and are of the opinion that the transactions of the Bank which have come under our notice have been within the powers of the Bank.

We have checked the cash and verifiefd the securities representing the investments of the Bank at its chief office and principal branches at a date other than and in addition to, the verification at 30th November, 1918, and found that they were in agreement with the entries in the books of the Bank relating thereto.

In our opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the affairs of the Bank according to the best of our information and the explanations given to us, and as shown by the books of the Bank.

T. HARRY WEBB, C.A.
of Webb, Read, Hegan & Co.
JAMES MARWICK, C.A.
of Marwick, Mitchell, Peat & Co.
} AUDITORS

FREE!

To Every Man who is building or remodelling his barn

THIS BT Barn Book shows you how to build your barn from start to finish, tells how to make the foundations, how to lay the cement floors and how to build the walls, how the cattle-stands can be made so they will not be cold, shows the best and most economical methods of laying out the floor space and putting in the stabling, shows right and wrong ways to remodel an old barn; shows how to ventilate barn and build cupolas for the roof. It tells how to frame the barn by a method that saves half the cost of the old way; shows how two men and a team can hoist the bents to position. You can build or remodel your barn yourself with this book to help, because every point is clearly illustrated by full-page photographs and blue print working plans.

This new 352-page book

This is the most elaborate and complete book on barn building ever published in Canada. It contains over 125 views of modern barns. Photographs of up-to-date barns were obtained in all parts of this country, and have been reproduced with full-page and double-page cuts, which show clearly every detail of construction. There are useful tables, showing the best measurements for Mangers, Gutters, Cattle-Stands, and Passages, costs of cement work, best sizes of doors and windows, amount of ventilation for different kinds of stock, capacities of silos, capacities of mows. There are also working plans for 14 different barns and exterior views of the completed barns. Best construction for Hog House is fully illustrated.

BT Galvanized Steel Stalls, Steel Horse Stable Fittings, Steel Cow Pens, Calf Pens, Steer Pens, Bull Pens, Manure and Feed and Hay Carriers, and Water Bowls are shown in actual use in many barns. Complete specifications for Stable Equipment which are useful in getting proper quotations from manufacturers.

This book is printed in colors and is bound with hard covers. It is not a mere catalogue. It is a work of reference, which you will prize and keep for years. It is considered authoritative on the subject of stable and barn construction. A copy of it should be in the hands of every man who is thinking of building or remodelling a stable, or who is going to put in the Sanitary Steel Stable Equipment.

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Yet we offer it without charge to any man who will write and state if he is building or remodelling this year, when he expects to start the work, and the number of head of stock he keeps. If you are building or remodelling next year, or later, you will receive the Barn Construction Section of the Book, this is the part which will interest you most until you are ready to go ahead. It is a neatly bound book of 80 pages.

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Your Name.....

P.O.....Province.....

Section.....Township.....Range.....

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(SEMI-MONTHLY)

5 cents a word—per insertion

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FOR SALE—FLEMISH GIANT RABbits, all ages. White Scotch Collie pups. Guinea pigs, all colors. Guinea fowls, Peafowl, Wild Geese, Pheasants, etc. A 3c stamp for reply. Address J. J. Gareau, St. Roch l'Achigan, Que.

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FARMERS' MAGAZINE

Canada's National Farm Magazine

JOSEPH MCGOEY, *Manager* F. M. CHAPMAN, *Managing Editor*
ETHEL M. CHAPMAN, *Associate Editor*

"At the head of all sciences, and arts, at the head of all civilization stands not militarism, the science that kills, not commerce, the science that accumulates wealth, but agriculture, the mother of all industry and the maintainer of human life."—Jas. A. Garfield.

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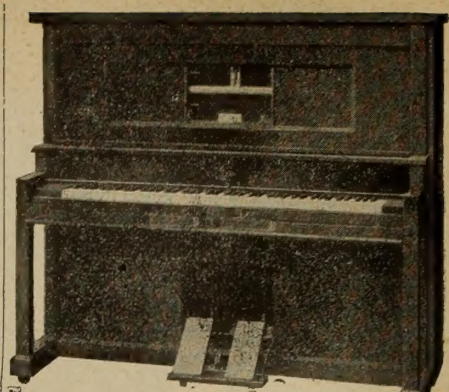

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Investments & Insurance
For the Farmer

Victory Bonds Go Up

By H. H. BLACK

THE prediction that Victory bonds would be selling at a premium very shortly has already been verified, when the bond that originally cost the subscriber $98.66 one year ago is now listed at $101, that is, the 20-year bond due in 1937. Next in value to this are the 15-year bonds issued in connection with the last Victory Loan, and the 10-year bonds of 1917, at 100¼. The present yield of the longest term bond is 5.42 per cent. at 101, and the other two, 5.47 per cent. and 5.48 per cent. respectively. The pendulum has swung definitely now to the long-term bond, an impossible offering when the war was at its height. Conversely, the point has been reached where Governments will try to get along with short term issues as the more advantageous, not to the holders but to themselves. Here is how one of the best known of United States investment houses states the case: "The passing of the Fourth Liberty Loan, oversubscribed by over a billion dollars, makes high world record for financial achievement." The ending of the war and the decision of the Secretary will make this the last of the long-term loans, and a long-term issue by the United States Government at 4¼ per cent. must in time go to a decided premium. And the Canadian Victory bonds have the advantage of 1¼ per cent. on top of this!

Too strong emphasis cannot be placed on the advisability of investing in a long-term issue, as one that will produce the greatest average yield over a period of years and in addition, provide the greatest likelihood of an appreciation in the original cost price. One of the best known examples of this is the War Loan issued early in 1917, maturing in 1937, and paying 5 per cent. A few months ago this was selling under $94, and now is finding a ready sale at $96 to 96½. Still earlier this year the price was only 91½. This factor should prove an important incentive to purchase (as well as the assured yield of many bonds) as a form of investment. Many of the industrial bonds also are working up to higher levels since the war ended. One of these rose from 82 to 88½. But of them all the highest class investment to-day would be the 20-year Victory bond issued in 1917, and so highly is this considered that bond dealers have been unable to fill their orders since the two years' issues began to be handled once again by the special committee. Second on the list should be placed the 15-year bond.

In the near future there will be a number of issues by municipalities and possibly one or two Provinces, the former at least of the long-term class. Investors should study these carefully, especially as to the security behind the promise to pay. Bond holders in Canada promise to grow rapidly. Nor should the purchase of thrift stamps be neglected. These should prove a valuable kindergarten course in investments.

MAKING YOUR WILL

Too many farmers do not concern themselves about their wills. They have property and neglect, from day to day, the care of the estate after their decease. Surely they know of countless estates in litigation because their builders had not set their houses in order. But Micawber like they think "it will never happen to mine." They read of case after case of estates being dissipated by honest, but inexperienced executors or beneficiaries but they heed not.

Now what about your case? You can not even approximate when your call will come—and you know it. Is your house in order?

True you have some life insurance. You perhaps have other property as well. It is possible you would leave an estate—even if you were to die to-night—sufficient to provide a good living for your dependents—provided it was handled skillfully.

Every farmer should have his will made and safe executors appointed. Every provision should be made for the comfort of the widow and no injustice done to the various members of the family. Anyone can draw up his own will provided he observes the legal requirements to make the will binding. It can be changed at any future time if circumstances demand it.

THE FIRST INSURANT

William Gibbons, of London, is said to have been the first man to have his life insured. On June 18th, 1853, he signed a contract with eight men by the terms of which he was to have his life insured for £283 for one year for 8 per cent. of this amount. In 1859 a resident of a Connecticut city was travelling in England and became interested in the workings of accident insurance for travellers. So he came home and promoted the first accident insurance company in that country. His first client was a resident of Hartford, whom he insured for $5,000 against injury in his stroll from the post-office to his home. Marine insurance goes back to the early part of the fourteenth century and comes from Belgium.

THE WHEAT SITUATION

By T. M. Fraser

THE wheat situation is the most stirring, and, potentially, the most alarming national problem of the moment in Canada. Every day draws nearer the time when the Western farmer must make his arrangements for his next year's work. Although the seed will not be put into the ground for several months yet, the farmer has to finance a considerable way ahead. Probably never before was there so much land ready for crop in Canada. The campaign of production was just ready to bear full fruit; and it was generally felt that the farmer would have at least one year more of big fixed prices, with the probability of a Government guarantee behind them, before the war ended. The fact that the United States had guaranteed prices for the 1919-20 crop led him to accept it as unquestioned that Canada would do the same. So he was not worrying; but was calculating his profits. Then peace came; and left him up in the air, where he still is, and making it blue with his complaints and protestations.

The farmer has been called a profiteer; but generally speaking, the charge as preferred against the Canadian farmer during the war is unfair, and while the guaranteed price of $2.24½, Fort William, which he got for this season's crop, is pretty nearly three times the prices that prevailed before the war, it is acknowledged to be a good deal under what wheat would have gone to if no restraint had been put on it.

Continued on page 39

THE CANADIAN BANK OF COMMERCE

SIR EDMUND WALKER, C.V.O., LL.D., D.C.L., President
SIR JOHN AIRD, General Manager
H. V. F. JONES, Ass't. Gen'l. Manager

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THE MAN OR WOMAN WHO SAVES

and buys a War Security, or helps a bank to do so, is giving most vital help to the Empire in its crisis.

Open a Savings account at any branch of this Bank.

17

A Time To Be Cautious

It is no doubt a time to be cautious. But it is possible to be over cautious. There is no reason why a man should leave his money on deposit when he could as easily and with equal safety obtain 5½% by investing it in

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At the present time, Mortgage Corporation 5½% Debentures form a profitable and safe investment for idle money.

Interest at 5½% is payable in cash on the day it is due. Principal on the date agreed upon.

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Not a dollar has ever been lost by an investor in these Debentures.

An interesting booklet about "PROFITS FROM SAVINGS," which gives some very valuable advice, will be sent free on request. Write for it to-day.

Paid up Capital and Surplus Funds - - $3,362,378.63

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A New Year Suggestion

Amongst the many matters to be arranged or rearranged at the New Year, surely Life Insurance is one of the most urgent. No man can count his affairs in order until he has assured, so far as human foresight can assure, the continued welfare of those dependent upon him.

A Great-West Life Policy will give this assurance on terms remarkably attractive. Rates are low, conditions liberal and clearly expressed, while the profit returns to policyholders are notably gratifying.

Let us explain the best policy for your needs.

THE GREAT-WEST LIFE ASSURANCE COMPANY
Dept. "W" Head Office, Winnipeg

When to Figure the Cost of Tires

YOU can't tell what your tires cost *until they are worn out.* Certainly, what you paid for them is not the real cost.

No man with sound business sense would figure his tire cost at so much per tire. That would not tell him what it was costing to run his car.

The cost of tires must be figured at so much a mile.

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FARMERS' MAGAZINE
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The ECONOMICAL PRODUCTION *of* CREAM

By R. Russel Fleming

WE are told that twenty-five per cent. of the food consumed in America is the product of the dairy cow. Of this vast amount, fully one-fifth is cream and its products. Its importance then cannot be overestimated. On the whole, the war has meant an uphill struggle for the dairymen. This has been particularly true of the cream industry; for prices have not kept pace with the increase in the cost of feed. In some cases, the demand has fallen off. For example, ice cream and candy manufacturers, who had hitherto been using cream of a high percentage in butterfat, found themselves about a year ago limited by governmental control to about a ten per cent. cream. Many sweet cream shippers were immediately cut off and were compelled to turn to other ways of marketing their commodity. However, with the recent turn of world events, we may look for a gradual return to pre-war conditions.

Everyone who is engaged in the manufacturing of cream is, or should be, vitally interested in its economical production. I have referred to the dairyman as a manufacturer. This he is in the truest sense of the word. In a sense he may be considered superior to a manufacturer, as the word is used in its ordinary everyday use. For the manufacturer, as we usually understand him, is one who, taking inanimate matter, by the means of machinery or other contrivances transforms it into some serviceable material. The steel magnate, for instance, knows that in a pile of iron, barring flaws, there are a number of units of raw material, each having identical strength under identical conditions. He has a definite knowledge of what will happen when this material is passed through a machine—he knows exactly the capacity of his machine, how much work it will do in a certain time and how efficient that work will be. As a final reward for his labors, he has, in most cases, a definite knowledge of the price he is going to receive. The only uncertain element remaining is that of demand for his goods, and he even overcomes this by entering previously into an understanding with some one who desires to purchase his wares by signing that form of agreement so well known to city businesses and so little to the farmer—a contract.

Dairying a Complex Problem

But what a different situation faces the manufacturer of dairy products. His machinery is *animate*—no two machines are the same, no two have the same capacity. A bushel of grain fed into one machine gives mostly beef; in another mostly milk; and in another mostly waste. *And without realizing it, the dairyman is coping with one of the most uncertain and complex problems known to the human race.* Hence the up-to-date dairy farmer, setting himself to master the intricacies of his business, must direct his efforts first to an exhaustive study of the medium through which he must work—the cow.

There is a sense in which all men are born equal; there is a sense in which all cows are born equal, and that is that they are all born equally unequal. The ability to turn raw food into milk is not the same in any two animals, and is one that must be born in the cow. With a knowledge of this, the livestockman has his eye continually on the alert for cattle and families of cattle that possess this trait in a marked degree, for such families hand down these qualities with a marked regularity. "Like produces like"; but not always in the first generation. Thus it becomes the breeder of dairy animals to make certain that animals are mated in such a manner as to preserve good qualities and eliminate the bad. In doing this, he is taking the first steps in economical milk production, for just as his immediate returns are in no small measure due to the care with which the ancestors of his present herd were mated, so too his returns in the future must depend on the attention which he is now paying to such a vital question.

Twylish 11th Imp. Jersey shows a model udder. A grand champion at Toronto.

THIS is the second article by Mr. Fleming. The points on tractors on a big farm appeared in the September 15th issue. As the writer has made a very special study of his work on this big farm, his words will be read and re-read by the men who are seeking to make dairying pay. He goes into almost every question that troubles the farmer and from his own experiences some help is likely to be gained by other breeders and dairymen. Incidentally he refers to the new scheme of organization of all dairymen that is being mooted in Ontario just now.—EDITOR.

Use the Best Sire Possible

The most economical way to improve a herd is through the use of a good sire, and not only a good sire but the best that can be had. The man handling a number of grade cows worth between $100 and $200, can well afford to pay $500 or $1,000 for a sire if he can possibly finance it. This fact has long been recognized by up-to-date dairymen. It was brought home to me in a very forceful manner not long ago while at dinner with one of the leading livestock authorities on the continent who carries on a very successful business in Jersey cattle.

"You would be surprised," he said, "but practically all the high priced bulls we sell from our farm are sold to head herds of grade cows."

"What," I replied, "do you mean to tell me that with the reputation your herd has as a breeding establishment, your bulls are not being snapped up by the pure-bred herds"?

"No," he replied, "Jersey breeders, I find, are looking for bulls from $100 up to $200. They rarely want to go higher. But we have enquiries from all over the country by dairy farmers with herds of grade cows who expect to pay in many cases at least $800 or $1,000. It has been rather a hard campaign, but we are at last getting them educated up to it."

After all, it does not require much reasoning to see the soundness of their position. It is surely good business and we may look for great developments on these lines in this country. Assuming then that we have recognized the old principle that "the child is father of the man," and that the first and most important step is in the breeding operations, we pass on to the next step of feeding the cattle for the most economical production.

Twylish 11th Imp. on her Island heath. Record 3 lbs., 5¼ oz. butter in 24 hours. 103 days after calving. Owned by R. J. Fleming.

Must Know His Food Value

Whether or not one is feeding his own feed or purchasing it, every dairyman should have a thorough knowledge of what is the relative value of feeds. It may pay to sell what you have and buy others. Once you have learned this, it is very simple, yet invaluable. Before going further, let me say that no feeder of livestock of any kind should be without Henry Morrison's "Feeds and Feeding." I regard this as the most useful book that has ever been written on the subject of livestock feeding. It is absolutely indispensable. Turning to the

chapter on "Economy in feeding livestock," a sample table is given showing how it is possible to figure out what feeds are really the cheapest, not according to their actual value per ton, but according to the actual price of a pound of disgestible food. With this knowledge, the next step is to choose those feeds which are cheapest and combine them in such proportions that the ration is well balanced. This also is clearly explained in the above book. It will remain with the feeder to give as much of the expensive concentrates as he thinks will justify him in actual monetary returns. It is not common in commercial dairy herds to have separate rations for each cow. This practice is followed widely where special cows are on long distance test, and after all if the proper conveniences are provided takes little more time. But the commercial feeder is usually content to add or subtract a pound or so of grain, according to the amount of milk being given and the condition of the animal, which must be determined by the feeder himself.

While we have always endeavored to feed our own cattle on the strictest commercial basis, the fact that many of our cows had cost considerable sums induced us to be a little more lax in feeding than we should otherwise have been; we have, however, kept accurate track of what milk was produced. There is no excuse for any dairyman not weighing the milk of each cow separately each day and writing it down. It takes but a second to do and gives invaluable information. The Government provides excellent forms for the purpose and a post card brings any number to your door. I am convinced that the reason why so many dairymen drop this practice, after following it for a time, is that the adding up of the figures is too tedious a job. Every farmer can surely find some one in his home town who uses an adding machine who would be glad to do this for him for a reasonable fee. Once you find such a person, it is merely a matter of putting this sheet in an envelope and posting it. The information you get will pay you dollars in return. Finally, in addition to knowing the quantity of the milk, it is necessary to know its quality.

Using the Babcock Test

Every dairyman must have a Babcock tester of some sort; and what is more should be absolutely proficient in its use. It is not an easy thing to get good readings all the time. There is such a temptation to be sloppy at some point—either you have not strained the milk, or have not mixed the sample thoroughly, or have used hard instead of soft water, or a dozen and one things which give an inaccurate reading, which is not only useless, it is worse than useless, for it conveys wrong information and your pocket foots the bills. *Accurate Babcock testing is not easy, I find.* It depends on following out the thousand and one little details that are given in the directions and bulletins devoted to the subject. If you are too busy to do this work yourself or do not seem to get good results when you do, why not take the samples to someone you know to do it for you? We have these samples taken on the first of each month in our own herd. It used to be that in the stress of work at certain seasons, it would be put off for a week or two, with the result that the work at times became irregular, so that we finally stipulated that no matter what else happened this work was to be done on the first of each month. Samples from four consecutive milkings are taken. We multiply this by the total amount of milk given during the preceding month and we have the results in pounds butterfat. These are then sent in regularly to the head office. It is very interesting for the men in the stable to know from month to month how each of their favorite cows stands. Where the men are milking the same cows daily, each is anxious to be milking the heaviest milkers in the stable, consequently we find them stripping the cows with greater care, and a good-natured rivalry springs up which is conducive to fostering and maintaining a good spirit in the stable.

As soon as possible after milking, we take the milk into the dairy. There we have practically all the machinery that is ever used in an up-to-date milk plant, including a boiler, pasteurizer, bottlers, etc. As to how much of this a dairyman will purchase will depend on the amount of business he is going to do. From a strictly business standpoint he should use as little machinery in the dairy as possible. This, I know, is contrary to ordinary commercial economics. I am satisfied that the milk producers who are doing sufficient business to make much machinery pay are few and far between. Barring bottling milk and cream for our private use in the city, all our milk is separated and the cream shipped to the city.

There are just two secrets to running a successful dairy—keep everything scrupulously clean and keep milk and cream if possible always under 40° Fahr. Possibly no factor has played a greater part in

enabling the Borden Company of New York to attain its enviable position than its absolute insistence on the latter point. We are just as anxious to know the temperature of the ice water in which our cream is set as we are to know that of the cream itself. The only way to know is to use a thermometer, which we insist on our men using. It is important too that the cream be cooled as quickly as possible. To do this we had our cooling tank made at the side of the separator by excavating in the ground and making cement sides. An arrangement is made to keep an empty can submerged and by extending the cream spout on our separator a foot or so, the cream flows directly on the ice. This enables us to get the cream cooled half an hour earlier, which is an important item in warm weather. This, we think, is the ideal way to have a cooling tank. The water keeps cooler underground and it is very easy lifting in and out heavy cans when the sides are flush with the level of the floor.

We have always pasteurized our milk or skim milk, even in spite of the fact that the herd is regularly tested for tuberculosis and the re-actors removed. It is the safe plan where you are feeding skim milk to hogs and calves. Pasteurizers are as a rule fairly expensive. We were very fortunate in being able to purchase an old fashioned one in the States at less than fifty dollars; which pasteurized four cans at a time. Such things as coolers and similar articles can often be picked up secondhand at a great reduction. We keep our calf pails in the dairy and take just as much care of them, and sometimes I think more, than our ordinary dairy pails and utensils. Like all others, we have had to find out many things by experience. One of the bitterest lessons we have learned is that in order to successfully raise calves you have to be most scrupulous in your attentions. Three improvements have enabled us to cut down a large annual loss of calves, until now it is the exception to lose one. They are as follows:

I—Find out the exact amount of milk each calf should have and see that it gets the same amount each day at the same hour. Weigh or measure the milk;

II—Use a thermometer in your pails and keep milk at blood heat;

III—Be more than careful in keeping calf pails and calf pens clean.

I had the privilege of spending several months last winter down in a large dairy plant in New York. They often hold milk for three or four days at a time. This they can do because it is held at a very low temperature. As we only ship cream three times a week, I figured on my return that the milk would keep for several days just as well on our farm as at Borden's without being separated. We quit separating at nights. In the morning we simply had to put the end of a steam hose in the can for a short time till the milk rose to blood heat. In the winter time this could be carried still further. We had planned, before our dairy was burned, to separate just four times a week during the winter, but, of course, are now prevented. This saving alone would run into hundreds of dollars a year.

Markets For Sweet Cream

It is not always easy to find a market for sweet cream. As a rule, buyers in the city prefer to deal with the large dairies. They make up in service what they lose in quality. However, if one is fortunate enough to find a good customer, at a satisfactory price, it is the most remunerative way to dispose of one's products. We have always shipped, up till a recent time, 24 per cent. cream. If the cream is to be made into ice cream, you can be sure that it will be standardized to a much lower percentage. The reason, in most cases, why ice cream buyers generally purchase thicker cream than they wish to eventually use is because they can buy it cheaper that way. Some time ago, a cream shipper was discussing with me the price of cream. He asked me what I was getting and I told him. He then mentioned what he was getting—a much higher amount for a thicker cream—and chuckled merrily because he thought he was getting a better price. I went home and figured it out. We were getting just ten cents a pound butterfat more than he. The cream shipper, though he sells by the gallon should always think in terms of the value of a pound butterfat. He should always carry some such table with him when offering his cream for a sale as the following, which I used myself some time ago:

Sliding Table of Relative Values

Price per Gallon.	Price per Pound Butterfat. 16%	20%	24%	30%
$1.40	.87	70c	58c	46c
1.45	.90	73	60	48
1.50	.93	75	62	50
1.55	.96	79	64	51
1.60	1.00	80	66	53
1.65	1.03	83	68	55
1.70	1.06	85	70	57
1.75	1.09	89	72	59
1.80	1.12	90	75	60
1.85	1.15	93	77	61
1.90	1.18	95	79	63
1.95	1.22	97	81	65
2.00	1.25	1.00	83	66

I have found that it is often possible to get the purchaser of cream to be willing to accept at the same price a lower per cent. of cream, when we would not think of raising the price and keeping the percentage the same. The above chart comes in handy in such an instance. Suppose for instance we are selling 24 per cent. cream for $1.70 per gallon. From the chart we see that we are receiving seventy cents per pound butterfat. Leaving out the consideration of extra express charges in shipping a thinner cream and more skim milk sent off the farm, we would be receiving the same price roughly if we were selling 20 per cent. cream for $1.40 per gallon. Now if we offer 20 per cent. cream for $1.50 per gallon we have raised our pound butterfat price five cents, often without the buyer realizing that he is paying more.

Farmers Should Test Cream Daily

Some time ago, while on a visit to the Guelph Agricultural College, I was having a chat with our old friend Professor Dean on dairy matters. "Do you standardize your cream?" he asked me. "No," I replied. "Don't you find you have your hands full making the farm pay without helping to support the purchaser of your cream?" "I wasn't aware that I was doing that, but will investigate when I go home," was my answer. Upon my return next morning I went into the dairy as the cream was being shipped and took a sample out of a can. It tested 27 per cent. when it should only have been 24 per cent. Then I sat down with a pencil and figured the thing out. "When did you test a sample of the cream last?" I said to the man in charge. "A week ago," he answered, "and it was running all right." "Look here," I said, "from this day don't ever ship out of here an ounce of cream without testing it, if it takes you half a day to do it. In that can you shipped this morning there were nearly three pounds butterfat too much; at the price we are receiving you have just presented the buyer in the city with about two dollars. The chances are that you did the same yesterday and the same the day before." Most cream buyers in the city are very careful that their end is not the losing one. A prominent ice cream and confectionery store proprietor confided to me that he had found out that it paid him over and over again to get every can of cream tested that he purchased from one of the prominent dairy companies. "I take a sample," he said, "and send it out to a chemist who happens to do similar work for the dairy company. They are forced to recognize his test. If the cream is of a larger percentage than I should receive, I say nothing; if smaller, I only pay them for what they have given me." As we keep accurate records of all milk and cream that passes out of the dairy, and also the average test of the cows' milk, we have a check on the amount of cream we should get. For instance, our milk averages pretty close to 5.1 per cent. butterfat. If we are shipping 24 per cent. cream, then for every 4.7 pounds milk that goes into the separator we should get one pound cream. This is obtained by dividing 24 by 5.1. Separators should always be kept in the pink of condition. The skim milk should be tested regularly. We have found also that considerable losses occur

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ONTARIO FARMERS DEAL *in* MILLIONS

Big Combinations of Rural Interests

MANAGER POWELL, of the United Farmers Co-operative Company, did not over-state the fact when he said the company transacted a business of one and three-quarter million dollars in its last year, on a capital smaller than that employed by many merchants in minor towns. Herein is one of the most remarkable features in connection with the origin and progress of the United Farmers' commercial organization—the rapid expansion of the business of the company and the extent of the operation carried through on a very meagre capital. The sales made by the company have increased from $226,000 in the first full business year of the organization (1915), to $410,000 in 1916, $918,000 in 1817, and $1,765,000 in 1918. The capital of the company, even to-day, is nominally $93,000, but less than $43,000 of this capital has been paid up, and not a little of the money paid in on shares has of necessity been expended in preliminary expenses.

At the recent annual convention of this farmers' company, Mr. Elmer Lick named—as one of the chief needs of such an organization—vision. That the leaders and members have this in full measure was made clear in the comprehensive plans outlined for future development and in the intelligent enthusiasm with which the plans were received. These proposals for the future include the establishment, at the Union Stock Yards, of the company's own agency for selling livestock shipped in by local organization; the erection of district warehouses and provision for the handling of grain and seeds.

With provision for the co-operative shipment to Toronto of cattle, sheep and hogs produced by local members, and the sale of these on the stock yards direct to abattoir companies through a U.F.O. agency, two needless middlemen will be cut out, and the producer will get the last dollar there is in his stock, less cost of handling it. Mr. Manning W. Doherty did not go too far in saying at the annual meeting that, with this scheme in operation, the company's business in livestock alone should, in two years, equal the business of 1918 in all lines.

In the matter of district warehouses, which were first proposed by Mr. Elmer Lick, it was explained by President Burnaby that it is not proposed to establish retail stores, but rather something in the nature of the local elevators provided by Saskatchewan Grain Growers. These warehouses are intended to be made receiving depots at which farm produce such as potatoes, eggs, fowls and butter, can be collected for sale, through the company's retail city store, to Toronto consumers. That is about as near an approach to "direct from producer to consumer" as we can hope to get. These warehouses can be made to serve as well for the storing of mill feeds, flour, sugar, twine, salt, wire, etc., supplied from headquarters in Toronto, and from which local farmers can draw at will. This would give all the advantages of wholesale buying and car lot shipments, without the necessity of all the farmers of a neighborhood uniting in buying, and distributing forthwith, a car of salt to-day, a car of twine next week, and so on.

The proposal to establish a seed branch is another advance step which holds promise of giving valuable results. When one comes to think of it the proposal appears the most reasonable thing in the world, that farmers who grow grass and clover seeds, or grain for use as seed, should deal directly with other farmers, why, for example, should a farmer in Haldimand County sell his alfalfa seed to a local dealer, to be sold by the latter in turn to a wholesale dealer, and then have this same seed sold by the wholesaler to a local merchant who would retail it out to a farmer in Durham County?

One point brought out at the annual meeting of the shareholders of the Farmers' Company, and one that has been heard of before, was as to the alleged greater difficulty in building up a co-operative farmers' organization in Ontario, where farm production is varied, than in the West, where production has, in the past, been mainly along one line. This diversity of production, instead of being a handicap, should prove highly advantageous. Where dependence is placed in one line, either in farming or trading, if anything goes seriously wrong in that line, grave results are inevitable. Where there are several important lines it is not likely that more than one will be seriously affected at the same time.

As a matter of fact, too, farmers of the Western Provinces are no longer merely growers of wheat. Manitoba is increasing its dairy output at the rate of 20 to 25 per cent. per year. Alberta is not unlikely to lead Ontario both in dairy and hog production in a few years. As these new developments occur in the West farm organizations in the Western Provinces have proved their ability to grapple with them. About all of Saskatchewan creameries have been merged in one co-operative company. The whole livestock industry of that province bids fair to soon be on a co-operative basis.

If we turn our eyes towards Europe, we find similar conditions. Denmark is not a one-product country. Denmark produces—or did produce before the war—an enormous volume of foodstuffs in the form of bacon, butter and eggs. And much the greater part of this food output is handled co-operatively.

What Denmark has done, and what our own West is doing, Ontario can do. There is no reason why the apple, cheese, livestock and egg marketing by Ontario farmers should not all be done through the United Farmers' Co-operative Company. When this day does come, the warehouses and elevators owned by Western farmers, and the business done through them—great as these things are—will undoubtedly look small by comparison.

Ontario's Parliament *of* United Farmers

THE United Farmers of Ontario held their annual meeting in Toronto in the middle week of December. So powerful has this body become, with its five years of life, that every county and almost every school section in the whole province from Glengarry to Rainy River had a delegate in attendance. The program of the convention bristled with live topics and these topics were handled in a way to command admiration by those who in the cities are prone to belittle agricultural intelligence.

The discussions at these annual gatherings are taking on the marks of responsible men in national affairs as the farmers realize their share in Government. They are becoming more thoughtful. They applaud the firebrand less and the thinker and progressive speaker more. Nothing they see is gained by useless knocking unless behind the shillalah marches the bridge-building gang of our country's national life.

Linked now all across the continent from B.C. to N.B., the United Farmers are becoming, under the Canadian Council of Agriculture, a forceful body in rural life.

While it is impossible to report all the sayings and doings of this big convention in an article here, we give herewith the resolutions passed and some of the fine points made in the leading addresses.

Mr. E. C. Drury of Simcoe County made a masterly presentation of the farmers' economic situation. Beginning with the four assertions that:—

1. That shortly we must expect abnormal conditions incident to war times to cease, war industries to close down (as indeed many of them have already done) and the prices of commodities to drop from the abnormal levels of the last four years to normal, or even subnormal levels.

We will be unwise as a people, as we will be unwise as individuals, if we lay our plans on the basis of prices due to war times. We must lay our plans as prudent citizens and individuals on what we may expect at normal times.

2. That our foreign indebtedness being, as it were, crystalized in terms of money, must be met by the export of commodities, and that, as the prices of commodities become less, it will take relatively more of them to meet these obligations.

That is, we do not owe wheat, we owe money, and that will not change; if we owe $100 now we will owe $100 after five years, when wheat is perhaps only a third of what it is worth now.

3. That only those commodities which we can produce and sell at a profit, that is, where the cost of production in Canada is less than the selling price in the markets of the world, are of any value in paying off our debt, or in buying those things which we must have from abroad.

That will be clear from the story of the old lady who conducted a thriving business in oranges which she bought at a shilling a dozen and sold for eleven pence, and who said she could not live if it were not for the roaring trade she did. (Laughter). Well, that kind of business does not appeal to me or any sensible man. Only those things which we can produce at a cost less than we can sell them for are of any use to us. You will not get rich if you are producing hogs at 15c a hundred and selling them at 14c.

4. That to produce commodities for ourselves which we can more cheaply buy abroad must necessarily result in diverting capital and labor from profitable industry to unprofitable, as well as burdening profitable industry with the extra cost of the commodities produced.

Let us illustrate. We as farmers are producing farm produce for a living. We could grow oranges if we chose, but they would cost us far more to grow than we could buy them for, and a man who would produce oranges for himself and his family would of course be a fool, spending his time tinkering over those oranges when he ought to be producing hogs. The same thing applies to a country. If we as a country produce things for ourselves which we could more cheaply buy abroad, we are wasting our time. There is only one exception to this, and that is the case of those things which are absolutely essential to our existence; we might produce them even at a loss in order to have them. But if we produce ordinary things which we could more cheaply buy abroad, the taking of men and money from those things that could be made at a profit and putting them on these things which are made at a loss would work out so that the more we did the poorer we would be.

"Bearing these four points in mind," said Mr. Drury, "it becomes clear that, as in the time of war just past, it was the part of wisdom to close down or restrict all unessential industries in order that our energies might be devoted to those necessary to the winning of the war. So, in the time of reconstruction, where our chief business will be to meet our obligations and maintain our solvency, it will be absolutely necessary to see that unprofitable industries, that is, those that cannot produce as cheaply as their products may be sold for in the world markets, do not become a clog to profitable industries, that is, to those industries whose products we may hope to sell in the world market at a profit. These considerations at last bring us to the discussion of that vexed and vexing question, the tariff.

"I might as well say that I am a crank on the tariff. I have been fighting those fellows for the last thirteen years. During that time I have seen some progress

THE *United Farmers' Co-operative Company and the United Farmers of Ontario held their annual conventions in Toronto, on Dec. 17-20 last. These meetings were attended by some 2,000 farmers from a membership of 25,000. The discussions covered all phases of their work. Some notable speeches were made and some actions taken that show the strength of these organized men. They objected to the judicial decisions in the celebrated Cross case at Brantford, where a farmer was fined $500 and costs for certain things he had said in a telephone conversation with a neighbor, and as the United Farmers thought the magistrate wanted to get at them for their Ottawa delegation of June, they put up Cross' fine for him, and protested against what they called star chamber methods. They heard good addresses from several leaders. Listened to Ben Bowman, M.P.P. of Manitoulin; Calder, M.P.P. of Oxford and J. W. Widdifield, their candidate in North Ontario. Discussed the paper question and resolved to go ahead on the getting out of a daily paper for farmers. We give herewith some of the conclusions reached in a form easily remembered by our readers.*—EDITORS.

made. I have suffered somewhat personally. I have had hard knocks, and I think I have been able to give some hard knocks—thanks be for that. This question is at the present time a very live question. It is a question which has now to be fought to a finish. It is not a question of the farmers' seeking; we have laid it aside during the war, but while the war was on our opponents, the manufacturers and the Industrial Reconstruction Association, have brought it forward and made it a propaganda, and we must remember that now we cannot shelve the question. It has been put before the people of Canada by a powerfully backed propaganda for the last six months. We must meet if fairly and squarely, and solve the tariff question (hear, hear) In discussing that question I am not going to ask favors for the farmers of Canada, but I am going to show that unless we get fair play, not only we, but the country as a whole, will suffer (hear, hear and applause).

"What is the tariff? It is an import tax levied on goods entering a country. I may say that the word 'tarift' comes from a place named Tariffa. I am informed that in the old days of Mediterranean trade the east was infested by marine pirates who sailed out from their port of Tariffa and levied toll on the passing merchant ships. It describes the process pretty thoroughly and accurately in the present day (laughter and applause). It is a word that has amply lived up to its origin and antecedents. Where these goods are actually imported, the amount of the tax goes to swell the revenues of the country, and in this case the tariff is properly a 'revenue tariff.' It must be borne in mind, however, that the tax is paid by the people of the country into which the goods enter, and who ultimately consume them, and not by the 'foreigners' as the advocates of protection have so often claimed.

"The price, for instance, of a piece of Scotch tweed in Toronto, will be, to the ultimate purchaser, a sum made up in something like the following matter:—Cost of manufacture in Scotland, plus freight, plus customs duty, plus reasonable profits, wholesale and retail.

"Two years ago I had an interesting debate with Mr. D. A. Russell, and we had the articles on the platform with the prices marked, and we could see, in the flesh, as it were, the working out of this economic law. The people who ultimately consume the goods pay the tariff, and you cannot get away from that. On that occasion we had a home-made article and an imported article selling at the same price."

He then went on to show how the price of a home-made article of the same quality is always approximately the same as that of the imported one. In this case the tariff goes, not to the Government, but to the manufacturer, "where," said Mr. Drury, "it represents *either that much extra profit to him*, where he is as well situated as his foreign competitor to produce cheaply, *or the loss he would be compelled to accept where he cannot manufacture as cheaply as the foreigner.* This is what is called the protective feature of the tariff.

The Vicious Circle

"But the protective tariff has other secondary effects which are quite as important as the primary effects. Because it increases the cost of so many articles used by all the people (whether these articles are home-made or imported), it increases the cost of living of all the people. Therefore, the money wages of all workers must be raised to meet the increase. The teacher, the preacher, the doctor, the lawyer, the laborer, the retailer, and all the other classes, must have more money in order to meet the increased cost of the 'protected' articles they must buy.

"They are not any better off in reality, but their money wage is higher. This again increases the cost of their services to each other and to the community, and so the 'vicious circle' is started, and the cost of living goes up and up.

"But, if there are 'protected' industries, there are also industries that are not protected, and cannot be. They are those which are particularly adapted to the country, that produce far more than can be used at home, and hence, the price of whose product is fixed abroad in the world's markets. To these industries the effect of protection is disastrous.

"The cost of production in these industries is increased, not only by the higher price of the protected articles used in the industry, but by artificially high wages and salaries of all other classes. As a result these industries cannot pay as high wages to those employed in them, or as high interest on capital invested, as the other 'protected' industries. Hence they are retarded in their development, and we may even find them retrogressing.

"The net effect of protection then, is to encourage those industries which are less suitable to the country, and to discourage those which are more suitable, or in other words, to encourage those industries where a unit of labor produces the least, and to discourage those where a similar unit produces most.

The tariff produces either a profit or incompetency. There has been a great deal of incompetency. We may well be proud of the adaptiveness shown by the Canadian manufacturers in war times. They have brains if they care to use them, as all Canadians have brains, but I tell you that before the war, and behind the shelter of a protective tariff, incompetency existed. An honored woolen manufacturer told me of finding a machine in a woolen mill which was held to be up-to-date, which the Yorkshire foreman told him had been obsolete 20 years ago in the mills of Yorkshire. If we farmers were so behind the times that we were employing machinery that was out of date 20 years ago, we would be severely censured for incompetency. The Canadian farmer has to meet the competition of the world, and must be up-to-date, and we produce more per capita than almost any farmer in the world; but our manufacturers do not have to, because their profits are assured by the tariff tax, and they have not done so (hear, hear and applause). Some people think that the vicious circle started with the cost of food because it was the primary necessity of life. Remember that food is not the primary necessity of life any more than anything else. Food is not more necessary than the tailor or the plumber; and the editor of the *Globe* or *News* or *Telegram* would be no better off if he had a good breakfast, but had to go to his office on a cold winter morning without the protection of clothes, than he would if he had the protection of clothes and had to go without his breakfast. (Laughter and applause). Everything we use is a necessity of life. The man whose plumbing system has broken down, needs a plumber probably as much as he needs a dinner. The only reason that I can see for the attitude of newspapers in advocating the regulation of food is either that those people who said, "Regulate the food, because it is a necessity of life, and leave the other things unregulated," thought that the farmers produced the food and somebody else produced the other things. (Laughter and applause).

A Humiliating Confession

"Mr. Parsons, late President of the Canadian Manufacturers' Association, has assured us, in a speech given before that body, and widely published by it at great expense, that 'speaking broadly, Canada must choose between a tariff with manufacturers on the one hand, or free trade without manufacturers on the other; the issue cannot be dodged and should not be clouded.'

"*There never was a more humiliating confession made by the President of a great organization in the time of his country's need. I mean that, after all these years of help for our 'infant industries'* they cannot make things as cheaply for our own people as these things can be bought abroad; that they, close to the consumer, must be allowed to charge, 20, 35 or 40 per cent. more than the manufacturer in England charges after paying the freight across the ocean, and to the point of consumption. It means that, when every hand in Canada should be turned to the most profitable industry in order to meet our immense obligations, these industries must not be expected to help pay our debt with goods, but must actually be allowed to tax other self-sustaining industries, to be a clog to our endeavor to pay our debts. However, enough 'interested sophistry' is evident in the rest of Mr. Parsons' speech to make us take even this statement with more than the proverbial grain of salt. Let us examine actual conditions as far as we can.

"I believe it is pure bosh to say that under Free Trade manufacturers in Canada would cease. There may be some, for which the country is unsuited, that might be forced to close down, but of these few we would be better rid, since it is obvious that they are now operated at a loss which they avoid only by shifting it to the shoulders of the consumers. To say that manufacturing cannot be carried on in a country such as Canada, where there are almost unlimited stores of various raw materials, limitless water power easily transmitted in the form of electricity, and a virile and resourceful population, and where living, under free trade conditions, would be cheaper and more abundant than in almost any other place on the globe is, on the face of it, ridiculous in the extreme. Mr. Parsons, of course, would not admit it, but the fact is, our manufacturers do not want lower tariff because they would be forced by it to forego unusual profits, to squeeze the water out of their concerns, and to give up the advantages which they have attained through mergers and combines, in the control of the market. Let us look at one or two cases. In Blue Book No. 39 of the year 1909, we find on record what we may well believe is a case typical of many among our manufacturers. The Dominion Textile Co., making cottons, had cut down the wages of its employees, alleging that it did not receive sufficient tariff protection to enable it to pay fair wages. A deadlock occurred as a result between employer and employees, the Department of Labor undertook to mediate, and as a result, the Secretary of the company admitted under oath that, while the company was only paying five per cent. on its stock, this stock had cost but ten cents for one dollar's worth, so that the innocent-looking five per cent. became fifty per cent., besides which the company was writing off immense sums for repairs and betterments. An enormous profit, so well disguised that it was only by chance the public found it out.

"The late President of the Canadian Manufacturers' Association, during the past year arising out of press criticism of the high tariff propaganda of that association, stated his belief that 'generally speaking, over a series of years farmers averaged up on their actual capital employed as great a percentage of profit as did manufacturers.' I believe Mr. Parsons knows better, but to test his sincerity *I challenge him to join with us in asking for a commission to investigate the whole matter, including profits on watered stocks and to make public their findings, said commission to consist of representatives from the Manufacturers' Association, from organized labor, and from the organized farmers, east and west, and I would like to add, from the professions.* We have had no reason to trust the Manufacturers' Association in the past, and we have none now. If they have a case, let us have the facts fully investigated and made public, and then the public of Canada may judge for themselves.

"But what has been the effect of the tariff on the farmers? Has it benefited them in any way? Let us just consider that old and still repeated claim of the protectionists, that the 'Home market' is a boon to the farmer. In certain lines it is undoubtedly a small advantage. The producers of certain kinds of fruit, of early vegetables, of winter eggs, possibly of cream and milk, though the benefit in the last is doubtful, are able to realize at certain seasons a better price for their produce, owing to the presence of nearby city markets. But these lines are small and unimportant in proportion to the whole agricultural production. *On the great staples of farm production, wheat, beef, pork, mutton, cheese, etc., the home market is of no more benefit than if the people composing it were in England.* We are constant exporters of these articles, and must be increasingly so, if we are to meet our foreign obligation. *Continued on page 16*

RESOLUTIONS PASSED BY THE U.F.O.

THE several resolutions that were carefully considered and passed in most cases unanimously covered the following questions:

1. Repeal at once the War Times Election Act, and a return to the Voter's List Act of 1914.
2. A permanent Parliamentary Committee be appointed.
3. Military training in the schools is condemned.
4. That people be educated in production costs by the Department of Agriculture.
5. Unwise expenditure on unnecessary highways condemned.
6. Request return of drafted men from the Siberian expedition.
7. All paper should be placed upon the free lists between Great Britain, the United States and Canada..
8. Appoint a committee consisting of Mr. Bothwell, Grey Co.; E. C. Drury, Simcoe Co., and Mrs. Laws, Haldimand Co., to co-operate with other bodies in educational investigation.
9. Condemned daylight saving scheme and asked that it be not re-enacted.
10. Approved proposal to form a co-operative cheese company in Ontario.
11. Instructs executive to oppose express rates increase before the Railway Board.
12. Approved the resolutions passed by the Canadian Council of Agriculture at Winnipeg with a few minor amendments. These were printed in the FARMERS' MAGAZINE of Dec. 1st.
13. Approved of total prohibition of the manufacture, importation and sale of intoxicating liquors.
14. Declares in favor of policy of soldiers being settled on the land, preferably in older settled districts.

NOW *for* APPLES—LIKE THESE

By W. L. SMITH

WHAT is the outlook for the immediate future of the apple growing industry of Ontario?

There are four chief factors to be considered in framing an answer to that question: (1) The extent of the winter damage sustained last season; (2) the condition of the smaller orchards, two to five or six acres, aside from the special injury sustained in the past winter; (3) the situation in competitive apple growing areas; (4) the prospective after-the-war market.

Let us take these factors in order, dealing first with the injury sustained during the exceptionally trying weather conditions of a year ago. It is even yet too early to make an accurate estimate of the extent of that injury. At the beginning of the present season this was placed in some sections at 40 per cent., but this was later on reduced to 25 per cent. If we have favorable conditions during the present winter the lower estimate may prove about correct. If we have another trying winter the higher figure may be exceeded. Fall conditions have been anything but favorable, the comparatively mild weather in October and November not being conducive to the hardening of new growths. In any case it will probably be found that a considerable percentage of the trees that were weakened last winter will succumb before June next.

The most serious aspect of the situation in regard to the seasonal damage of last winter lies in the fact that this was greatest in the most important apple areas of the Province. Western and Central Ontario escaped fairly well, while east of Toronto losses were heavy. Serious damage appears to have begun about Oshawa and to have grown more serious eastward in Ontario and on through Quebec, while the Maritime Provinces escaped almost scot free. The greatest damage in this Province, aside from the St. Lawrence Valley, where the apple area is very small, was in the Bay of Quinte district. And the Bay of Quinte district is the most important apple growing section of the Province. Northumberland County, with 20,000 acres in orchard, leads all the rest of the Province in this line. Durham, Northumberland, Hastings and Prince Edward Counties have in the aggregate 51,000 acres in orchard or close to one-fifth the orchard area of the whole Province. It was in these counties that the most serious losses were sustained last winter, and it is probable that their productive power has been thereby reduced by at least one-third.

A Northern Spy tree, 28 years old, which produced 9½ barrels this year.

Picking scene around a heavily loaded Spy tree in Mr. Remmer's orchard. Being close to Pickering village he can get extra help readily.

Even more important than the losses from winter injury in these counties where apple growing is a specialty, and where orchards run from 15 to over 100 acres each, is the effect of the steady deterioration in smaller orchards all over Ontario. This deterioration began before the war and has been aggravated during the war. These smaller plantations may, indeed, be pretty well written off, at least in so far as commercial production is concerned. Even the larger orchards have been more or less neglected during the war, and, in the opinion of Mr. C. W. Baxter, Chief of the Dominion Fruit Division, it will be two or three years before these can be restored to their former condition.

In dealing with conditions in competitive areas, this continent will alone be considered. Definite information as to these is lacking, but it is safe to assume that the general causes at work here have made their effect felt in other American apple growing areas as well. This is particularly true of Nova Scotia and British Columbia. It is more or less true of the U.S. Labor shortage, absence of export for four years, and more profitable employment in other lines, have resulted in more or less general neglect of orchards the continent over. Limited new planting, exceptional losses due to a severe winter and lack of care, extending over a series of years, are almost certain to result in a serious reduction of apple production in all North America for some time to come. Here in Ontario it will not be surprising if there are very few apples left for export, for some years to come, after the local and western markets are supplied.

As to after the war market prospects Mr. Baxter is an optimist. "By the time our productive power is restored to anything like the conditions existing before 1914 Europe will have recovered from the effects of war and will be able to take all the surplus we can spare," he said. Besides this the domestic market is steadily growing greater.

"But," continued the Chief of the Fruit Division, "there will be no place for the orchard that, like Topsy, is just left to grow. Apple production must in future be the work of specialists. I do not mean by this that a man must be an apple grower and nothing else. Personally

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The interior of the apple house where over 1,000 barrels of choice apples are ready for the headers on the Remmer farm. J. D. Remmer, the young proprietor of this farm, has had an average crop of 700 barrels per year from his 6¾ acres of orchard during the last ten years. In 1918 it produced 1,100 barrels, with 80 per cent. of it No. 1 fruit. The orchard is regularly manured, pruned, scraped and sprayed. It has been kept in sod for some years. The varieties are Spies, Greenings, Baldwins, Russets and McIntosh Reds. The farm is situated on Duffin's Creek banks, north of Pickering, Ontario County. The owner is a member of the Oshawa Fruitgrowers' Association which sells its apples co-operatively and expects to do a renewed business now that the war is over.

THE LURE *of the* CATTLE GAME

By FRANK D. TOMSON

EDITOR "THE SHORTHORN IN AMERICA"

Rosa Hope, J. J. Elliott's Champion Heifer.

AS the Lake Shore Limited pulled westward from Cleveland, a successful business man of that city seated himself comfortably in the Pullman only to find that his neighbor across the aisle was a one-time college chum who had become identified with the steel industry at Youngstown, Ohio. Both were en route to Chicago.

The Cleveland man, after greeting his friend, stated with a show of enthusiasm that he had had a letter a few days before from Brown saying that if he had any business to bring him to Chicago the first week in December, he would hope to meet him. "The letter stated that he would be in attendance at the stock show. I believe they call it the International," said the Cleveland man, " and that he would be easily located there most any day of the show."

Brown had indicated the hotel where he would be stopping, but encouraged his Cleveland friend to look him up at the show in order that he might come in contact a little with the livestock business.

"You will remember," said the Cleveland man, "that Brown went out west of the Mississippi River somewhere, and started a bank after he had finished college. And I have an idea that he has probably loaned considerable money to these cattle breeders, and is sticking pretty close to this show in order to see that they don't blow too much of it. I understand that these pedigree stock folks have a good deal of enthusiasm and pay some long prices when they find something that suits their fancy. You remember at college Brown was a mighty level-headed sort of a fellow and always seemed to have an optimistic view of things. I remember too he was a great hand to be out of doors. I have always felt that you and Brown came a little nearer to being my kind of folks than any of the other old classmates, and I tell you I have been mighty proud to know that you both have been successful. Of course I have had a good deal of pride in my own success and it is all the sweeter because you two good old friends of mine are getting on at about the same pace. I have an idea that Brown has a number of banks by this time."

"In the morning unless you have urgent business, let's run out to this show and have a sort of a holiday. I like to see good stock. We used to always keep some good stock at home on the farm when I was a young fellow."

The Youngstown man said he would be busy during the forenoon, but could go out immediately after lunch and spend the entire afternoon if that would suit. And so it was agreed.

During the journey these congenial friends recalled many happy college days and compared notes on their business experiences. Arriving at Chicago they engaged quarters at the same hotel and met by appointment for the afternoon off at the stock show.

They paid their entrance fee at the gate and expressed keen surprise that the entrance had such an English effect. The Stock Yard Inn and the Court made a most pleasing impression on them.

"Why say, whoever worked this out had evidently spent some time in England. He certainly has worked out a most pleasing effect. I wonder if these livestock folks appreciate this sort of thing. Evidently they do because they seem to be coming here in great numbers."

They quickly passed in, down the long alley way and occasionally stopped to have a look at the beautiful show animals in their stalls. They followed the crowd on through to the pavilion and agreed that they would probably find Brown in some one of the boxes overlooking the arena.

"I have a hunch," remarked one, "that Brown has his eagle eye on these fellows that are here with their show stock, especially those who borrow money from his banks."

They encircled the arena, studied the occupants of every box, but failed to locate Brown. Finally, as they became interested in the classes that were being judged, the Cleveland man remarked, "By George, that looks like Brown over there with that attendant's cap on and those big numbers fastened on him!" They moved a little nearer to the point and sure enough there was Brown decked out in the attendant's garb, wearing a "sandwich" number and holding a beautiful roan Shorthorn bull.

"What do you know about that!" said the Cleveland man. "This fellow Brown that I have been bragging about must be a farmer. I thought he was a banker all the time."

They leaned over the railing just a little and called to Brown who looked quickly around and recognizing his old-time friends waved his hand in a joyous fashion and said, "I will be with you boys pretty soon. I'm some busy right now."

Said the Cleveland man, "Why don't you give the halter strap to someone else there and come and visit with us?"

Newton Loyalist, 6th place at Chicago in one of the greatest classes ever shown.

"I'm going to visit with you all right, but nobody is going to hold this halter strap but me. And if you don't mind, just stay near and see where I land. I'm full of hope."

They took the cue and became interested in the contest. The judge was looking the animals over and after a long and rather tedious comparison began to assemble his favorite ones at the head of the class. Our business friends were delighted to note that Brown and his bull were among these favored few.

Then they began to study the judging with real interest and began to wonder whether Brown was really likely to have recognition among so many. One thing that impressed them was that Brown seemed to be completely absorbed in the showing of his animal. There was nothing left undone to present him in the best position.

Finally the judge requested Brown to move his entry up one place and that left but three ahead of him.

"Say Brown's going up," was the Cleveland man's enthusiastic comment as he nudged his Youngstown friend.

"Sure he's going up, and I have a kind of a notion that he may go a little higher yet."

The judge patiently went over the several animals and made many other comparisons. He placed others, seemingly satisfied with the rating. He went to the head of the class and again carefully worked over each animal in the group, changing a place here and there. Then he looked Brown's entry over in a very exacting way and instructed him to take him to the head of the class.

"Well what do you know about that!" came in unison from both the Cleveland and the Youngstown man. "Why say, no wonder he didn't want to let anybody else hold that halter strap. By George, this fellow Brown must be a real fine stock fancier."

The judge having finished, the ribbons were handed out and the blue fluttered from the hand of one, Brown, as he waved it to his friends leaning on the railing.

As the class was led out he called to his friends, "I will be back in a few moments and as I have no entries in the next class will then be at liberty."

Presently he appeared minus his cap and numbers, attired as a business man and shook hands with both friends who congratulated him upon his winning.

They took seats up in the amphitheatre. "What the dickens are you doing in the cattle business, Brown?" was the Cleveland friend's query. "I supposed you were a banker."

"Yes," said the Youngstown man, "our old chum here has been telling me that you undoubtedly had loaned a lot of money to these livestock folks and were here to see that they didn't blow it."

Brown laughed. "If I didn't have any troubles except the money that I have loaned to these kind of livestock folks, I wouldn't have any troubles."

"Well, tell us about yourself. Are you still in the banking business?"

"Yes, I am in the banking business. We have several banks and have a fine business in connection with each one, but I have gradually shifted the responsibility of these banks to other shoulders and for a number of years have been paying a good deal of attention to my farm and herd.

"One of the first things in the way of property I acquired, when I went out West, in connection with our business was a farm. I expected to sell it as I wasn't a farmer, but I began to study the situation with reference to farm land values a little and I could see that there was likely to be a good deal of an advance in the valuation if I held it, so instead of disposing of it I bought more land adjoining it and decided to operate it myself.

"Then the question was what to raise, grain or livestock. I decided if I had a farm I ought to know a little something more about farming, so I slipped away and went up to the Agricultural College and took the two weeks' short course at holiday time. It didn't take me very long to decide after being there that livestock was the important thing on the farm. Then there came the question to be decided what kind of livestock, what grade, which would pay the best. I did some more studying. I talked with people of experience. I watched the trend of things and then I bought a few pure-bred, registered Shorthorns and from that time on my farming operations have been the most interesting part of my business activities.

"And here's a thing that will make you fellows

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The champion Shorthorn carlot at the 1918 International

DEVELOPING A RANGE SHEEP: *By* GEORGE K. MILLER

Romney-Marsh ram owned at Lethbridge, Alta.

THIS is third article in the series of farm and livestock stories of Western Canada, written by George Kay Miller, who knows the prairie country well, and is to the farm barn. He loves rural life and has a pen that conveys his impressions well. His articles will appear regularly during the winter.—EDITOR.

THE ways of the range breeder have been most devious and unaccountable, or largely unaccountable, in the past. All the sheep men have made money, even before-war prices for wool and mutton arrived, due to the fact that practically all their capital was in the livestock and not in large and expensive holdings. But big stock men as they are, their breeding operations have been a rude shock to the small farm breeders and to the theorists. They have shown a remarkable taste for complete and sudden changes of programme.

The usual way to get into the range business is to buy a band of ewes across the line, which are generally Merinos, varying from very fine American to big Rambouillets. When they come over the line they find themselves where the mutton ideal is rather strong and where wool is, as it properly should be, considered a by-product to a greater extent than it is in the States. Our grasses are more luxuriant, our climate cooler and our sheep appetites sharper and our British ideal of a beast to fill the eye, as the chief British breeds do, is likewise the Canadian ideal. So we find the Merino she stock commonly mated to some of the English breeds, Shropshire, Oxford, Lincoln, Cotswold, etc. According to theoretical orderliness if we begin with a Shrop male, for example, we are in decency committed to a steady grading up process, by the successive use of this breed of rams, until we have practically pure Shrops. And the same with whatever other English breed we may choose. But this does not go on the range. The first cross is good, the second not bad, but in the third, under pure range treatment, where sheep travel and rustle for all they get, winter and summer alike, the English high-grades deteriorate. They get small, the fleece gets open and light and the bone fine, and generally the signs of weak constitution are appearing, unless, of course, a good food producing farm enterprise is hooked up with the range business.

Commonly after the second cross the rancher switches straight across to the fine wool sheep, usually Rambouillet, and after a couple of years of fine wool top cross changes back to the mutton breeds again, perhaps Lincoln this time, or it may be to cross-bred rams, such as Lincoln-Merino or Cotswold-Merino. And so it goes along. What the theoretical sheepman on the side sees is that there is at no time in the progress of breeding in a range band a standard or steady type shared by ewes and tups alike, but a constant changing of the ewe type backwards and forwards alternately by the use of mutton sires on one hand or fine wool sires on the other. The majority of men in the business do not nurse up any worry over it. It pays well anyway and always has a rather temporary quality, so the rancher gathers the coin while the gathering is good. The sheep rancher just utilizes the free grass of newly settled countries for a few years, and then has to get out of the way of the cultivator or learn the new game himself.

A Few Permanent Enterprises

THERE are, of course, men in the business who try to acquire ownership in considerable tracts of land which yield greater food resources by being cultivated in part and which will give permanency to their work. These men take much greater interest in the breeding side of the business than the free grass pirates do. One of such men is R. C. Harvey, Lethbridge, Alta., who owns a flock of 15,000 ewes. Mr. Harvey is not only a highly successful man from the business standpoint, but has some forward look and the imagination of the constructive breeder. Mr. Harvey is bent on promoting the development of a range sheep. Some of the sheepmen in both Canada and the United States have been doing a little amateurish guessing as to the elements that might figure in the making of such a breed. The success of the first cross in Shrop-Merino mating has led a good many to think that some adroit management of these elements might produce the sheep desired, but it hasn't happened yet. Without making prophecy as to what may be done with the Shrop, it is not wholly irrelevant to note that the Shrop has been much too popular for its own good. The knife has not been sufficiently used and the country is filled with so many knotheaded, small males that it is hard to find decent rams even for satisfactory range use.

The Wool Index

BUT to return to our subject and to leave the theorizing just now and deal with facts and doings. Mr. Harvey has always in his range bands aimed to produce a heavy clip of wool and has excelled in this respect. He has likewise been instinctively critical as to the index of breeding skill that is furnished in a well and uniformly clad band of ewes or rams. Whether he looks on wool as a by-product, or on wool as the important product of the sheep business, he at least attaches large importance to wool, which is a characteristic and exclusive sheep product, and an essential and necessary consideration in the production of the desirable range sheep. The result of his work thus far really promises him the production of a satisfactory dual-purpose sheep, suited to range conditions. Where we are at at present seems to be that we have produced a satisfactory dual-purpose animal from the English breeds for farm conditions, whereas for range conditions we really have only the special fine-wool sheep, while the characteristic virtue of fine wool has disappeared. What we need, and what Mr. Harvey is aiming to produce, is a dual-purpose sheep for range conditions. What we need is a sheep that can travel, keep out the cold, produce a good carcass and the best possible grade of useful, commercial cross-bred wool.

Romney-Rambouillets

THE elements Mr. Harvey has chosen are the Romney-Marsh and the Rambouillet, the Romney-Marsh constituting the top cross. Mr. Harvey has not got very far as yet, but the developing of a type is not the work of a day. He has an excellent flock of big Rambouillet ewes, the result of careful culling and selection and is using the best rams obtainable in England. He has imported both Australian and English Romney rams, and this year has imported the best Romney-Marsh ewes obtainable in England to the number of two hundred and fifty. He has been able to show three fine crops of lambs of both sexes in these cross-breds. It is his intention to carefully select for matings with each other the best cross-breds in both sexes.

The outcome of this second mating will be awaited with interest. It is probably early to talk but the uniformity of the first cross is remarkable. Usually the first cross of any two opposite breeds gives strong constitutional sheep of good appetite and consequently of early maturing qualities, but the variations in type toward the male cross on one side or female on the other is equally noticeable. The Romney-Rambouillet cross seems the happy and fortunate "nick" by the looks of the stock. The yearlings are well fleshed, have good bone and are smart, active movers. Especially good are the fleeces. They have fine pink skins, beautifully lustrous, uniformly crimped wool of rather fine, soft quality, moderately lubricated and very uniform as to density and length of staple.

The similarity of the Romney and Rambouillet fleeces each in its own breed probably explains, but it appears to dominate the outcome of the cross. The Romney fleece differs wholly from the locky fleeces of the Lincoln, Leicester and Cotswold. The Romney wool stands out by its own density and does not fall in lashy flakes. The Rambouillet has a similar fleece. It is up to combing length, stands up well by reason of the absence of excessive yolk and is of sympathetic strength and density with the Romney. The old English breeder, Spooner, was probably guessing it right the first time when he said that similarity in such characteristic and dominant feature as the wool was a good basis on which to determine or decide a cross.

The Making of Breeds

THERE are perhaps a good many who think we have all the breeds we need, and pretty nearly everybody will admit that we have a variety of stock to choose from greatly ahead of our supply of good feeders and breeders. The sheep business, however, has been much injured by the continual claim that sheep are merely scavengers on farms or rustlers on broken lands. As pointed out before, we are well supplied for the farm but not for the range, and the chance and need of doing something constructive on the breeding side for the range business has been standing open for fifty years or more. At close quarters it seems a simple enough thing to cross a couple of breeds of sheep, but it is at least fortunate or a credit to a man's judgment to choose right breeds. The big work is yet to be done in the conception of a type, and the realizing on it by selection or by such variation of treatment in the crosses as may be found necessary. Mr. Harvey is seeing straight as far as he has gone. The practice of trying out crosses in order to get breeds with new excellences and adaptations has good warrant. The Leicester and Southdown breeds were the first improved breeds in their respective classes of long and short wools, and are still the most perfect of the long and short wool types, but still they are not by any means the most popular and useful sheep we have to-day. The blood of the Leicester has gone to the improvement of all the other long wool breeds, such as Lincoln and Romney-Marsh and even the Shropshire. The Southdown has given blood to all the middle-wooled, dark-faced breeds of England. The most popular of our mutton breeds at present are the more recently improved breeds, and some of the best of these are straight cross breeds. The Oxford, for example, which is growing rapidly in popularity in Western Canada on account of being the big, strong kind among the hardy middle wools, is of straight cross-bred origin, being the result of a top cross of Cotswold on Hampshire ewes. They are the glory of the county of Oxfordshire in England. The ranchmen appear to be backing Mr. Harvey's enterprise, as large sales of these cross-bred rams have been made both in Canada and the United States.

Part of a flock of 15,000 ewes on the Harvey ranch at Lethbridge, Alberta.

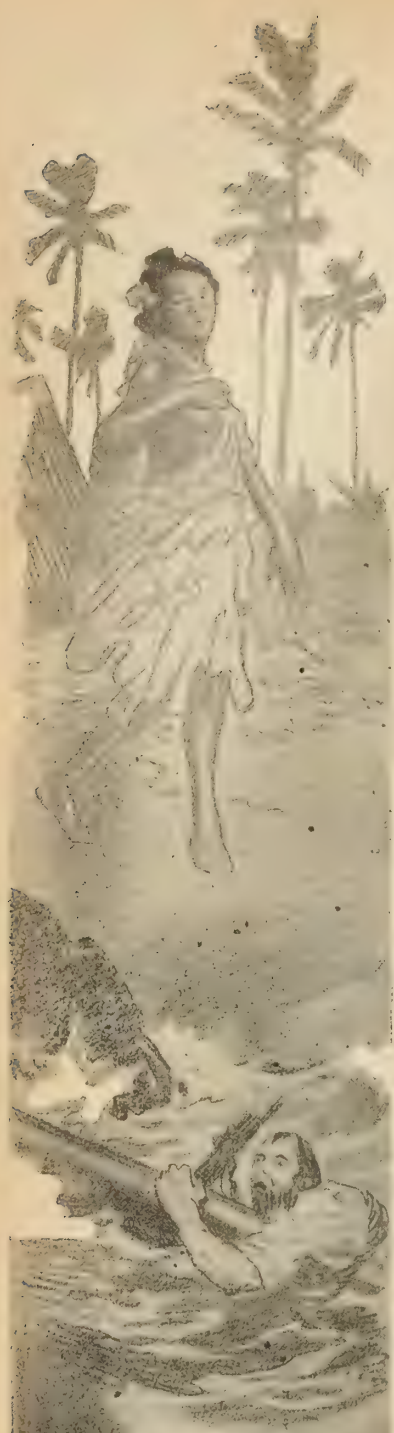
My HOUR

By

ROBERT W. SERVICE

Who wrote "Songs of a Sourdough," "Rhymes of a Red Cross Man," etc.

Illustrated by C. W. Jefferys



Day after day behold me plying
My pen within an office drear;
The dullest dog, till homeward hying,
I reign a very king of cheer.
A throne have I of padded leather;
A little court of kiddies three;
A wife who smiles whate'er the weather;
A feast of muffins, jam and tea.

The table cleared, a romping battle,
A fairy tale, a "Children, bed."
A kiss, a hug, a hush of prattle,
(God bless each little drowsy head!)
A cosy chat with wife a-sewing;
A silver-lining clouds that lower;
Then she too goes, and with her going
I come again into MY HOUR.

I poke the fire, I snugly settle;
My pipe I prime with proper care.
The water's purring in the kettle,
Rum, lemon, sugar, all are there.
And now the honest grog is steaming,
And now the trusty briar's aglow
Alas! in smoking, drinking, dreaming,
How sadly swift the moments go!

Oh, golden hour! 'twixt love and duty,
All others I to others give;
But you are mine to yield to Beauty,
To glean Romance, to greatly live.
For in my easy chair reclining. . . .

I feel the sting of ocean spray,
And yonder wondrously are shining
The Magic Isles of Far Away.

Beyond the comber's crashing thunder
Strange beaches flash into my ken;
On jetties heaped head-high with plunder
I dance and dice with sailor men.
Strange stars swarm down to burn above me;
Strange shadows haunt, strange voices greet;
Strange women lure and laugh, and love me,
And fling their tokens at my feet.

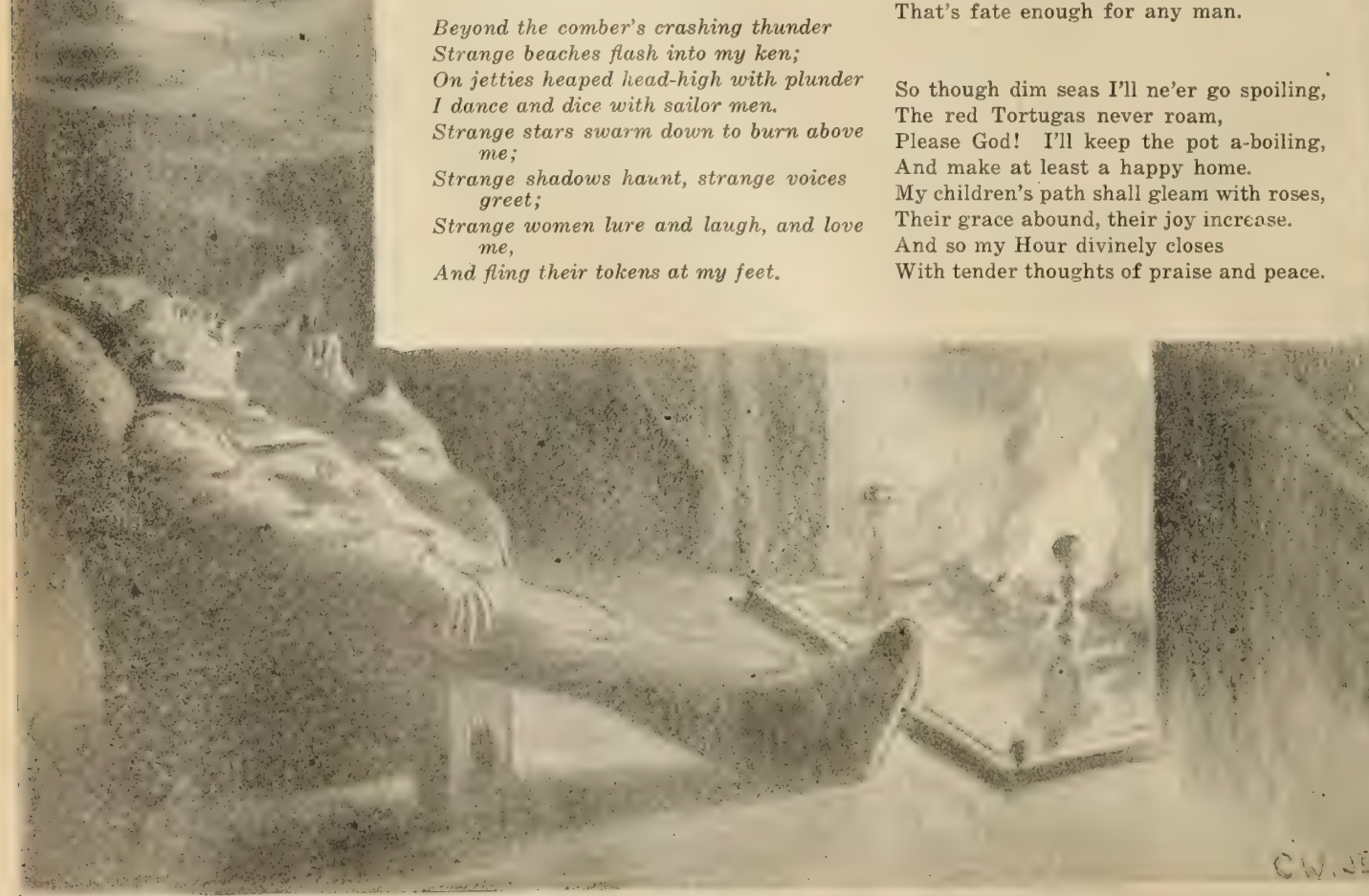
Oh I would wish the wide world over,
In ports of passion and unrest,
To drink and drain, a tarry rover,
With dragons tattooed on my chest;
With haunted eyes that hold red glories
Of flaming seas and crashing shores;
With lips that tell stupendous stories
Of streaming decks and gold mydores.

Till sick of storm and strife and slaughter,
Some ghostly night when hides the moon,
I slip into the milk-warm water,
And softly swim the stale lagoon.
Then through some jungle python-haunted,
Or plumed morass or woodland wild,
I win my way with heart undaunted,
And all the wonder of a child.

The pathless plains shall swoon around me;
The forests frown, the floods appall;
The mountains tip-toe to confound me,
The rivers roar to speed my fall.
Wild dooms shall daunt, and dawns be gory,
And death shall sit beside my knee,
Till after terror, torment, glory,
I win again the Sea, the Sea.

Oh anguish sweet! Oh triumph splendid!
Oh dreams, adieu! My pipe is dead.
My glass is dry, my Hour is ended,
It's time, indeed, I stole to bed.
How peacefully the house is sleeping!
Ah! why should I strange fortunes plan?
To guard the dear ones in my keeping—
That's fate enough for any man.

So though dim seas I'll ne'er go spoiling,
The red Tortugas never roam,
Please God! I'll keep the pot a-boiling,
And make at least a happy home.
My children's path shall gleam with roses,
Their grace abound, their joy increase.
And so my Hour divinely closes
With tender thoughts of praise and peace.



TURNING *the* TIDE *to* COUNTRY LIFE

A Diagnosis of the Little Red School

By S. B. McCREADY

THERE is danger that the rural educational problems may be lost sight of in the enthusiastic attention that already is developing for technical and industrial education. It is not difficult to create a "boom" when aggressive Manufacturers' Associations, well organized Boards of Trade, enterprising Boards of Education, co-operating Trades and Labor Organizations are supported by the insistent publicity of city newspapers. The country will be nowhere in this competition for consideration. Its voice will be feeble indeed, as witness the fact that in the published statement of the platform of the United Farmers of Ontario there is not one single word about education—that one fundamental factor upon which the hopes for all the things that they fight for, must ultimately depend—Education.

The development of a well advertised, much discussed and comprehensive scheme of industrial education for the towns and cities, besides, will bring another menace to country life. Is it not easy to imagine that the country boys and girls will find in this new "pull of the city" another irresistible attraction? The only hope of counteracting this and offsetting, moreover, the old-time "pulls of the city" is that there should be a clear view of the necessity of readjustments and a large public support created to make readjustments possible.

AT this juncture it is very necessary that there should be a clear view of the status of education as it finds expression in the country. We must not delude ourselves any longer. Plain speaking is essential. Before remedies can be applied there must be a thorough examination of the patient. We must seek the causes and remove those that are hurtful instead of continuing to treat symptoms. The wise physician will do more than feel the pulse and look at the tongue. He will look into the family history, inquire about the diet, measure the arterial pressure, make a blood count, and set about his treatment in accordance with his scientific discoveries.

What would be discovered in a close examination of our scheme of education for country life?

Likely this: First, that there is no such thing as a clear-cut, recognizable conception of Education for Country Life. The country has never discovered for itself, nor worked out for itself a form of educational service to satisfy the economic, intellectual and spiritual needs of the men and women who work on the land. Perhaps the only country in the world which has done this is Denmark. But that is another story. There have been beginnings made in *Agricultural Education*, but *Education for Country Life* must be thought of as a far larger thing than mere instruction in technical agriculture. "Is not the life more than meat?"

Other conditions such as the following would further disclose themselves if the diagnosis of rural education were thorough and complete:—

(1) *A lack of idealism.* Will it pay? is the question? Will it bring material or social advantage? "If you are only going to be a farmer" what is the use of schooling? The claim of the school is secondary to potato-picking. Education as a human right for qualification for full citizenship or as an equipment for attaining best intellectual satisfactions has little or no claim. The passing of examinations has become the be-all and end-all of the school's services as measured by the people at large.

(2) *It is inadequate.* There is much truancy in the country. Attendance is very irregular. Many drop out of school before they complete a bare public school education. With the times demanding more and more a rural high school education for all who are to live out their lives in the country, the opportunities for this diminish. It is asserted by some of our school inspectors that country people, men especially, are not as well educated to-day as they were forty years ago. If this is true it is accounted for largely in the fact that older boys are no longer found in the schools in the winter months. The large part that should be played in national affairs by country people cannot be realized with large proportions of the country people inadequately educated. As Lloyd George says, "You cannot make an A1 democracy out of C3 material."

(3) *It has been non-progressive.* Education has failed to keep pace with modern changes in business and transportation, or in those affecting the home and society. Agriculture has passed from the pioneer period to the period of scientific husbandry, but the country school remains still as a pioneer school. It is a generation behind the times. There is just one sight in the country that is sadder than a poor, neglected, run-down little "red school house" of revered memory and that is a recently-built, costly and pretentious red brick school. There is hope for the first. The new school almost dooms those whom it serves to another generation of inefficient and insufficient education. The building of a new one-teacher school in the older settled parts of Ontario in these days is worse than foolish—it is criminal. It steals away the rights of country boys and girls—their rights to be fitted by the schools to make the most out of their lives.

(4) *It is incomplete.* There are one-teacher schools to take care of all boys and girls up to the age of fourteen and there is an Agricultural College that receives a small proportion of our young men. Between these there is no country people's school. The richest years of a boy's life for education—his 'teen age years, are unused. Just when he reaches the point where he is equipped to benefit from his elementary training, he finds there is nothing within his reach that can serve him. Of course there are High Schools and Continuation Schools in the towns and villages, but these chiefly are for those who aim to leave the country. For those who can attend school only in the winter months there is no place in these schools. If he has to board in the town it becomes much more difficult, for there are chores that he is required for night and morning. The organization of the school and the course of study followed does not admit of his attendance for a part of the school year.

There was a gleam of hope for better things on the educational horizon fifteen or twenty years ago, when the so-called Continuation Schools were first organized. They were apparently designed as schools to serve country people's needs. They have signally failed in this in spite of the repeated protests of those who had the supervision of them. Country people would not have a school, and rightly so, that handicapped their children for entrance into the professions. So the gleam faded. The Continuation Schools (misnamed now) have become merely second-grade High Schools.

(5) *It is not native of the soil.* The country school takes its fashion from the town graded school in its studies, its methods and its aims. It is urbanized except for its environment. It has discovered no distinct service for country life. When it has ambitions they are directed towards preparing pupils for entrance into town High Schools and through them to the city college, to be lost for all time to the country. When it expresses a pride in its achievements, it is that it has sent out boys who have prospered in professional callings. It measures its success in terms of urban prosperity, rather than in the general quality of the citizenship that is left at home. It does not matter if there are large numbers remaining on the farms very indifferently equipped, or entirely overlooked so long as its honor roll has a few bright stars to illuminate it.

It has failed to discover, except in a very small measure, the educational values that lie in the life, the work and the business of the farm. Agri*culture*—that culture-subject par excellence, upon which the human family has educated itself out of savagery into civilization, has been ignored and derided. Its histories, its readers, its arithmetics and its geographies are based on urban interests. In using them it would be miraculous if a teacher could do otherwise than inculcate away-from-the-land tendencies.

(6) *The teaching force is weak.* The true worth of any scheme of education must be measured largely in terms of the qualities of the teachers. In this field of service personality and devotion are pre-eminently important. Throughout Canada, it must be acknowledged, the country schools are in an inferior position in this respect. They are the training ground for young and transient novices. Successful teachers move on to town schools. The unsuccessful drop out or remain to serve where their deficiencies are unnoticed or if noticed, tolerated. The remaining resultant tends towards educational degeneracy. The old-time male teacher is a curiosity now. Girls have taken the place of men. Nor is there any signs of reaching a point of stability. With all the training schools busy every year turning out grists of graduates there is still the demand for new grists for the country schools.

The fact is that country people throughout Canada in general are served by the youngest and the least experienced of our teachers—and most of them young girls. There is little hope of a people getting far forward if this sort of thing continues. Compare the situation in Scotland where university graduates are not uncommon as resident "Domsies" in rural districts. A people cannot grow higher than the stature of its teachers. When shall we learn wisdom?

(7) *It lacks the organized support of women.* No doubt progress in rural education has been delayed by the state's neglect to invite women "to take a hand in the job." Women are naturally educators. Their desires for the best for children are keener than men's. They may lack the business sense developed by men in their monopoly in business, but they have vision and willingness to pay a high price for the welfare of their offspring—two great needs for attaining the best in rural education. When the day comes for them to make their influence felt, we will be especially thankful for the leadership of those good mothers who were once country school teachers. That leadership, too, which has developed in Red Cross and Women's Institute work will propel trustee boards into progress they hitherto never dreamed of, unless the signs fail.

While it is unfortunate, especially for our country boys, that young, inexperienced girls have come more and more to take charge of rural schools, it can never be considered anything but a great good fortune to have our country women actively interested in the schools in which, after the homes, their children receive the most important part of their training for the responsibilities of life.

(8) ***It is poorly supported financially.*** The cost of school is very variable in each province, and perhaps more variable as between provinces. It will probably run as low as $300 or $350 in Prince Edward Island and Quebec and as high as $1,200 or $1,400 in Saskatchewan and British Columbia. The cost in Old Ontario for average schools in well-to-do districts will be somewhere between $800 and $1,000. As a rule those who have to pay least seem to feel the burden of school taxes most. It would likely prove harder to raise an extra $25 for school purposes in the Island of the Gulf than to secure an additional $100 in the West. There is no more fruitful source of community "scrapping" than a proposal to lavish (?) money on a school or to increase a teacher's salary. There are few occasions in which one will find country ratepayers so unanimous as at an annual school meeting; no one ever objects to spending the least possible amount of money for the education of their children—or their neighbors' children. The main qualification for trusteeship in education has come largely to be "canniness."

UNDOUBTEDLY there are communities that are paying directly all that they may reasonably be expected to pay. In some of the newly opened districts the school tax is indeed a burden. It is felt by many that relief can only come, if it ever does come, from more generous support from provincial trea-

Continued on page 28

THIS *is the first of a series of articles on the educational problems of the country. Others will be written by men and women who have been thinking on the situation. These will deal with the whole question from every angle. The contributors to these are each interested in the problem. The writers will be men and women who know, as parents, trustees, legislators, inspectors, and practical, clear-thinking farmers, who realize the great value of a proper rural school educational policy and who recognize that it has to be paid for. In fact we are paying now for many things that are worthless. Our readers will find they must respect these writers' opinions—they are not faddists. They present the case from their angles and are eager for light. The great middle road is the wise one to travel, although it often takes some eruptions to dislocate a wrong.*—THE EDITORS.

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Vol. XII. JANUARY 1, 1919 No. 1

UNITED FARMERS' DEMANDS

THE demands of the United Farmers as evidenced in their platforms and resolutions are quite legitimate. Being producers of agricultural products, the prices of which, as everyone sees now most clearly in the case of wheat, are regulated by world supplies, except where the working of the law of supply and demand is seriously interfered with by privilege or trade restriction, the farmers see clearly that their farm successes depend upon a clear right-of-way of their products to the consumers without the products being held up by interests that want to help themselves to the money returns en route. That is why farmers demand, in a clear-cut note, free trade in natural products. They want no restrictions upon their goods entering other consuming countries. In that view few people can differ seriously with them in these demands.

Then again, they declare for free agricultural implements. Why? Because in their production of wheat, pork, beef, cheese, etc., they have to have a wide range of farm machinery from harrows to tractors and threshing machines. The amount of machinery that each farmer must employ to get his gross production per year is away out of proportion to the same items in manufacturing concerns. This machinery and their labor are the basis facts of their production. Machinery is to them what raw materials are to the manufacturers and as such become raw materials in their manufacture of agricultural products. They see the manufacturers getting free trade on machinery and the duties rebated on their raw materials, and naturally ask for the same consideration. They have not always got what they wanted and this fact has made possible many of the forensic disturbances of the various farm movements.

And who can say they are wrong? Why should there be class legislation anyway? What is sauce for the goose should be sauce for the gander.

Naturally their platforms inveigh into the next great injustice that steps between the farmer and his finished articles—that is against combines and monopolies. There are other means of choking free interchange of products between the producer and the ultimate consumer than tariffs; they are the unfair combinations and restrictions of trade. That is why farmers are talking as they are. Politicians may seek to head them off by diverting and clouding the issues, but if they remain true to their own farm operations and to their visions, they will eventually get what they are after.

Rumor has it that they are going to get free agricultural implements in the near future—in fact it will be a hardy politician who can show the farmers why he has to pay 30 per cent. more for a tractor after February if the old tariff bars are again put up.

At any rate the farmer is now a business man and it is not outside the range of practical business for him to control manufacturing plants in the East as well as in the West, in the very near future. Western farmers have proven what they can do. Eastern farmers, always more conservative and slower, are following fast in the lead that the West has given.

THE QUESTION OF WHEAT

WHAT about wheat prices for the harvest of 1919? This question is perhaps troubling our politicians more than any other question of the day. Farmers in Canada have a guaranteed price effective till August 1st next, but no longer. The United States carries a guarantee of $2.24 for 1919. England carries her guarantees over into 1920. We are, therefore, in a peculiar situation in Canada.

With famine conditions anywhere in Europe or America there will be no need for worry. But with an abundance it is a question what is going to be done with Canada's exportable surplus, and what will be the basis of sale to the local millers of the crop coming on? The United States has about a million acres of fall wheat in excellent condition at this time of the year. Domestic U.S. consumption cannot exceed 640,000,000 bushels, and with a prospective crop of 1,115,000,000 bushels there will be a U.S. export needed for about 475,000,000 bushels. Canada will have approximately 150,000,000 bushels to export. Great Britain is growing much more than usual. The Argentine, Australia, and Russia are wheat-growing countries.

There is little danger that demand for wheat will fall down for two or three years. The European people are hungry and need all the imports that ships can bring them. In the meantime who is going to pay for the wheat offered to the U.S. Government, and who will protect Canadian farmers from being ground between the heavy millstones of competition during the crop selling season of 1919?

Obviously it is a question to be handled by the Union Government, for wheat was sown at the behest of the Allies as a big means of defeating the enemy. And it has defeated the enemy. Wheat raised for that purpose is a charge to military expenditures and must be, to a large extent, so regarded by the men who have been regulating prices.

As far as Canadian farmers go their wheat can be more largely absorbed than formerly by a greater white bread consumption and by our farm livestock and poultry. Needless to say the uncertainty about prices during 1919 will have the effect of considerably shutting off the seeding of spring wheat in Eastern Canada and the production of more coarse grains in all sections.

Then again, the Canadian hard wheat is in a class by itself and some advance the idea that Canadian wheat can slip into the world markets at very close to the U.S. guaranteed price. At any rate wheat is the big query in market and political circles.

GIVE LIVESTOCK THE RIGHT-OF-WAY

THE farmers of Canada have demonstrated during the four years of war, with a very much handicapped supply of labor, that they can produce livestock of all kinds on a big scale. Especially in bacon and beef is there abundant room for expansion. In poultry, wool and mutton there are splendid opportunities as well. Each province in the Dominion has facilities for the immediate extension of its livestock business. Farmers will raise hogs of the right type, while thousands of good cattle can be produced on her half million farms. The extension of this business will keep pace with the markets that open up. Few farmers have to be urged to go into the production of pork and beef, if prices warrant a decent return over cost of production. But where ruinous periods of depression are allowed to enter the business receives such a setback that the country practically makes no headway.

In order, therefore, to keep the farmers and feeders busy at a steady and increasing trade it is necessary that markets in Europe and even in other continents be secured and the way opened up for our participation in those markets.

This can only be done by the Agricultural Department at Ottawa establishing a service overseas similar to the one established by the Department of Trade and Commerce, which gathers information, provides credit, makes transportation measure up and secures ample storage space at the Canadian terminals at tide-water.

If Canada is to become a great people quickly it will be by the route of agricultural production and the Government at Ottawa should consider the development of agriculture and its allied business enterprises as demanding first consideration. Instead, what do we find? One member of the Cabinet out of nearly a score of men voices agriculture's needs and he gets little consideration.

It is time Canadian farmers took hold of the political situation like they did in Dakota. Agriculture wants and will give a bigger Canada, and a more prosperous people.

Let livestock policies get more right-of-way at Ottawa. It is time business men got down to business and, like the munition machinery, the old politicians should be scrapped at once.

THE SALVATION ARMY DRIVE

THERE are many reasons why the Salvation Army should receive full support in its Drive for a Million Dollars which will open on January 19 and end a week later. Its work among the soldiers at the front was such as to call for high encomiums from Field Marshal Haig and other high officers of the army. The noble men and women enlisted under the Blood and Fire Banner labored night and day for the comfort of the boys overseas, and the home folks got to learn from the letters from the front and from the lips of the returned soldiers of the splendid service that was rendered in supplying comforts to the men even right up under the crash of the guns.

The Salvation Army was the first of the social service organizations with the boys at the front. It will not leave till the last Canadian soldier is out of France, Belgium and Germany. It is establishing a string of comfortable hostels in the large distributing centres where the returning men may obtain good accommodation at the lowest possible rates. It is taking care of the wives, widows and dependent and orphan children of the soldiers by establishing emergency receiving and maternity homes. It is establishing a Soldiers' Families Visitation Fund to keep in touch with those who may need a little help and encouragement. These are some of the objects of the fund which it is hoped to create.

No organization knows how to spend money in just the same way as the Salvation Army does it. It gives full value. There is heard nowhere any complaint of the manner of dealing with the boys overseas. If a boy had the money he paid; but no soldier of Canada was ever sent away hungry from a Salvation Army hut.

That is the kind of service that counts. The farmers of Canada who had sons fighting for the Empire appreciate the self-sacrifice and the heroism of the Salvation Army and will be glad to accord the movement which is about to be launched their hearty support.

EDITORIAL NOTES

BUILD 1919 well!

WHAT about wheat?

EAT beans and mutton.

AGRICULTURE will carry on.

THE Cross case goes down to history.

WHAT about the wheat question, 1919?

LIVESTOCK production is one of the safe ways.

WHAT'S wrong with the Farmers' Declaration of Rights?

THE dairymen are getting their heads together none too soon.

CANADA at the peace conference should be represented as a nation.

SEVERAL U. S. professors are to report soon on the costs to produce milk.

YOU will note that the farmers have not asked for protection in any form.

STAND pat on your own organization. City men boast that farmers can't stick.

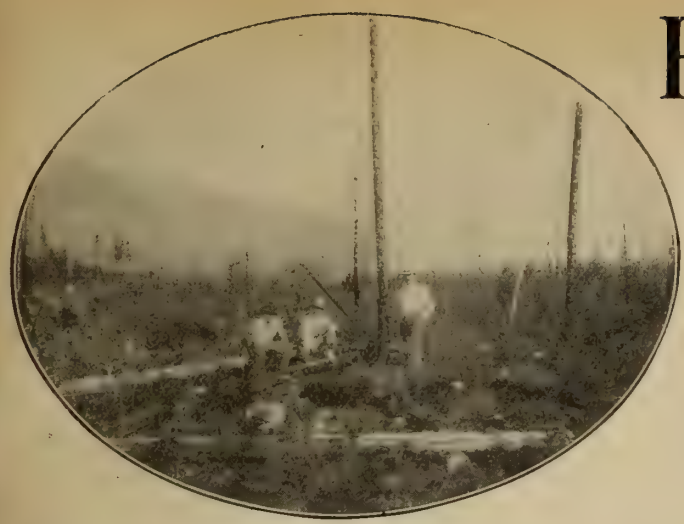
BY the way, is Canadian agriculture featured at the great Lyons (France) Fair?

ATTORNEY-GENERAL LUCAS would do well not to insinuate that farmers were Bolsheviki.

IT IS certainly charming to hear the city man making from 100 to 400 per cent. profit on some lines calling the farmers profiteers!

C. J. HARDEN, of Calgary, shipped several carloads of cattle to Chicago lately. He does not like Government ownership service.

FARMERS did not ask for the fixed price on wheat? And even if they did wheat was on the same plane as munitions for the guns.



Historical Backgrounds

THE LAND OUR BOYS INHERIT

By Peter McArthur

NOW that the Great War has come to a stop and peace is in sight our first task is to size up the situation and see what we have to go on with. It strikes me that about our greatest asset at the present time is our historical background. There is nothing in our past that we are afraid to go back to. Judging from the letters that reach me from the front—and I have received many from strangers as well as from friends and acquaintances—the one consuming longing of the boys is to get back to the Canada they knew and for which they were fighting. They have no ambition to come back and make things over. After what they have seen and learned in Europe—("This land is rotten with age-long hatreds," writes one boy)—Canada seems like a Paradise. They are not thinking of old inequalities and injustice to be rooted out before they settle down to enjoy life again. All they know of the history of Canada is that it is a place where industry can win comfort and competence without fear of intolerable oppression. The majority of them are the sons of common people and they were brought up to think themselves as good as any man in the land. Those whom they saw in high places—in Parliament, in business, in the professions, in short, in every field of ambition, had commenced as poor boys like themselves. They feel that in Canada every door is open to energy, industry and ambition. There is no class distinction to weigh them down. It will take Europe generations to achieve such freedom as Canadians have always enjoyed. So why should they worry. They want the old Canada they left behind them. Their historical background shows nothing to arouse their wrath.

In Europe everything is different. The tumbling down of thrones and the crumbling of governments is releasing the pent-up hatreds of past ages. History has been one long story of degradation and oppression to the common men who have been dragged into the war, and are now dazzled by the prospect of freedom. They feel that everything must be made over before their world will be fit to live in. They seem to think that when they take power from their kings they will be all kings. And apparently their conception of kings is much the same as Huck Finn's. When explaining to Nigger Jim about kings he said: "They just set around. Except maybe when there's a war; then they go to war. But other times they just lazy around; or go hawking. And other times when things is dull they fuss with parlyment; and if everybody doesn't do just so he whacks their heads off. . . They get a thousand dollars a month if they want it; they can have as much as they want; everything belongs to them."

The newly freed people of Europe seem to think that they are going to be kings of just that kind and when they find they are not they begin to slaughter everyone who seems to be keeping them from their rights. Their gloomy historical background has nothing to indicate what they should do. They want to get away from their past, and do not know what to do to make the future what they want it to be. All they want to be sure of is that they are not going back to things as they were. Their ambition is to break forever the deadly clutch of

"Hierarchs and kings
Who, from their thrones, pinnacled on the past,
Sway the reluctant present."

When our fathers and mothers left the old world and came to the new they broke with the past more surely than if they had taken part in a revolution. They fled to a wilderness where the old evils could not follow them. By their own labor they practically built a new world in which they could be free. In doing this work they developed a true kingliness which they left as a precious heritage to their children. They learned to be the rulers of their own spirits and tried to teach us the same lesson. They did not want to rule anyone for the sake of power and plunder and they would allow no one else to commit these follies. It was not theirs to

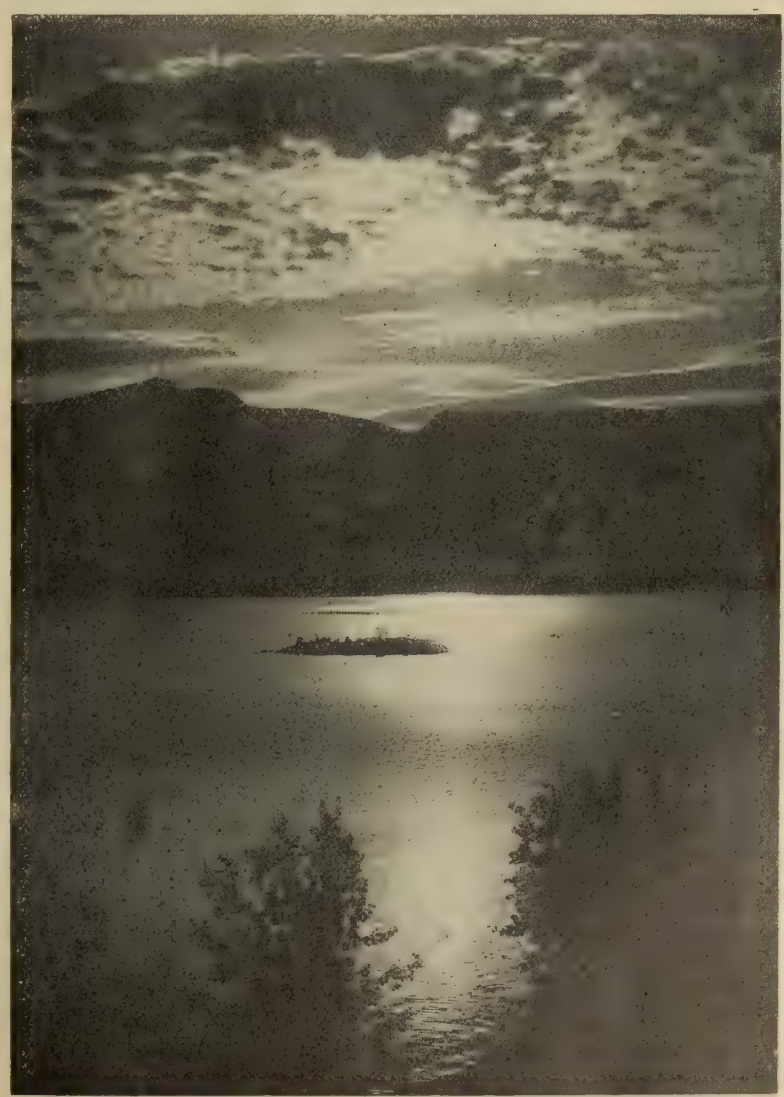
"Mix with kings in the low lust for sway,
Yell in the hunt and share the murderous prey."

In the lands that they left behind those who enjoyed ease and freedom owed it usually to plundering and oppressing the weak. The proudest were those who could trace back the foundations of their fortunes to the depredations of a ruthless conqueror. But in the new world everything was different. The foundations of fortunes were laid by industry and thrift. Though Mr. Meyers has given us a rather unpleasant volume about the "Sources of Canadian Wealth," the wealth it deals with is only a small portion of the great wealth of the country. On the whole, our wealth is clean, and if in the period before the war some of us did considerable railing against the big interests and other get-rich-quick concerns, it was really not because they were robbing the people so very much and causing hardship and poverty, but because a few men were accumulating wealth in a way that might tend to establish old world conditions among us. But all our troubles were of a kind that came within the scope of our Parliament and that can be attended to in due time. We had nothing to justify Bolshevism or any of the new legislative panaceas that are devastating the old lands.

I REALIZE that for a red-hot radical of other days I am writing in a very conservative strain. But you must remember that the war has put many things in a new light. Its sinister illumination has revealed conditions in Europe that make our troubles seem but trifles. We are willing to put up with them, or at least to deal with them in the old-fashioned ways of our fathers rather than launch on the unchartered seas of political experiment. We have more to fear from men who would hurry us into following the mad examples of Europe than anything else. Do not let us forget that our fathers established freedom in this country on a working plan, capable of improvement, but still having all the essentials. They established the freedom that our boys were willing to fight for, and, by fighting, to prove themselves the peers of any soldiers in Europe. It was the freedom they had enjoyed rather than freedom they had dreamed of that made them what they are. And if this country looks good to them as they look back to it, it is our duty to keep it looking good. We have a great task before us in getting our soldiers fitted again into the life of the country, but if we keep in mind the solid foundations we have under us and the historical background we have behind us we can manage the task in a way that will still leave open the door of ambition to enterprise, industry and thrift. I am hopeful that when they return our boys will help us in the task rather than start chasing legislative rainbows. Making a living has been at all times a rather stern business and it is likely to continue the same in the future.

BEFORE starting to make over the world in Canada let us stop long enough to remember that it is a fairly new-made world as it stands. As it stood before the war it was a great improvement on all past experiments in government and human freedom. We had freedom of speech, freedom of thought and freedom of conscience. If the necessities of the war compelled us to do away with some of those inestimable boons for a short time, we only laid them aside in order to do the work in hand as efficiently as possible. Only a people accustomed to freedom could have laid aside so much of their freedom as we did with a cheerful spirit. The first task before us is to resume that freedom in the fullest measure and then proceed to set our house in order under free criticism in the open light of publicity. If Sir Jingo McBore has not behaved himself when no one was watching him we can attend to his case. And if some men who were given authority show a disposition to cling to it for their own advantage, we will hand them the discarded Prussian titles of Von This or Von That and proceed to laugh them into oblivion. We were a free people, jealous of our freedom and a free people we are going to be. A lot of the new schemes I see put forward by excellent and authoritative people would put us in swaddling bands or worse, and I doubt if we will have any of them. The socialism that is making headway in Europe may well be kept there until it has been thoroughly tested. Those who are trying to promote it here may try to change its name and camouflage it, but it looks very like a new form of tyranny, no matter how it paints itself or no matter what form it takes. Let us wait and see how it works out elsewhere and in the meantime try to get back as near as we can to where we were before the war broke out. Then if we want to go ahead we can do it in the proper way, with our soldier boys helping us.

A Canada at peace is something worth rejoicing over. But we must not forget that Canada at peace is also a Canada in sorrow. Over fifty thousand of her best and bravest gave their lives to protect our liberties. Fully as many more will be



Moonlight on the Okanagan Lakes, B.C., only one of Canada's many beauty spots—a land worth fighting for.

totally or partially crippled for life. Others have borne the shock and suffering of wounds. While we rejoice we must remember the price that has been paid for all that we are enjoying in peace. Those who will never return have taken their place in that historical background which will ever be an inspiration to Canadians while the sun shines and water flows. Our fathers established a free country, our sons have kept it free. It is for us and for all future Canadians to be worthy of that brief but glorious history.

Ontario's Parliament of United Farmers

Continued from page 8

The price is fixed in the world's markets, and not in the home market. There is no way that I know of by which the farmer, when he takes ten hogs to market, can get more for the five that will be eaten in Canada, than he can for the five that are shipped abroad. Perhaps, if we were properly organized, we could get control of the output as our manufacturing friends do, and charge more for that used at home, than for that used abroad, as it is a matter of common knowledge that the manufacturers of Canadian binders and flour and cured bacon do. In the absence of such organization, and I do not think such organization likely, the home market is of no benefit to Canadian farmers.

"As we have seen, the products of the farmers' labor and capital must find its market abroad. There it comes into competition with the products of the cheap labor of India and Egypt, of the cheap land of South America. It is obvious that, since he cannot control the price of his output, it is important to reduce the cost of his production. A protective tariff running from 20 to 40 per cent. on all his equipment is no small handicap, and since he has a very limited capital to invest in it, it seriously reduces the amount of equipment he can buy. He must hire what labor he needs at wages fixed by competition with protected industries, he must pay for all services, professional, mercantile and public, at the same enhanced rate, and while compelled to live and carry on his business in a community where every service is enhanced in price from 30 to 40 per cent. because of a tariff, he must sell his product abroad in competition with the cheapest labor and land in the world. Under these circumstances it is no wonder he is going out of business, as our shrinking rural population shows.

We know that if our labor problem, in view of conditions, is not much worse than it is, it is because we are not paying the wages the manufacturers pay for equal skill, or anything like it; and we are not paying them not because we are unwilling to pay them, but because we cannot do so and make a living (hear, hear and applause). Even in war times the farmers were not getting anything like the rewards their capital and labor should get. The reason the farmers are on the job to-day is because the farmer loves the farm more than anything else. Sentiment has a whole lot to do with a farmer's life on the farm. They value their homes, and they value the farm that came down through the generation, and that is about the only thing that has kept our rural population from shrinking more than it has.

"But it is to the Canadian farms that we must most largely look to pay our immense interest charges and foreign indebtedness, and to save our country from bankruptcy. In the three years, 1912-13-14, which we may regard as showing before the war conditions to which we must soon return, out of a total average export of $359,189,371 of Canadian goods, the farms of Canada exported an average of $200,614,477, while the manufacturers exported only $45,657,481, and it is well to remember that a considerable portion of these, such as flour, were secondary farm products, and we may add most of the manufactures exported were from industries, such as the making of wood pulp, which would be benefited, rather than hurt, by lower tariff and lower cost of production.

"It becomes evident, then, that the redeeming of Canada's financial position which will be the work of the farms rather than of the factories. Indeed, Mr. Parsons admits that the Canadian manufacturers either cannot or will not meet foreign competition, will take no part in meeting our obligations abroad with goods, and must be allowed to tax the consuming public by a protective tariff, or they will cease to make for even home consumption. Perhaps there is more 'will not' than 'cannot' in it for there is no reason to believe that the attitude of the Manufacturers' Association now is any different from that of 1910, when its secretary said in Winnipeg:—

" 'The reorganized Canadian Manufacturers' Association is like a young giant, ignorant of its own powers. By the exercise of these powers it could, if it chose, bring several millions of people to the verge of starvation, or paralyze the industries of the whole Dominion.'

"This threat, for it is a threat, reveals the truly Bolsheviki attitude of this organization. Indeed, there is much in common between it and the Bolsheviki, for the central idea of both seems to be that they must be allowed to take other people's property for their own benefit. There is more excuse, however, for the ignorant, down-trodden Russian than there is for his millionaire Canadian prototype.

"Now, I don't know whether I am unfair to the manufacturers in saying this.

"But since it is to Canadian farms that we must largely look for the exportable surplus, which alone can save us from national bankruptcy, since Food Controller Thomson was literally right when he said that the first six inches of Canadian soil must pay our national indebtedness, it is perfectly clear that this industry must be set free to do its part. It is, and has been, sorely handicapped for lack of capital and labor, because capital and labor, under the handicap of protection, cannot find adequate rewards in it. With adequate capital and labor we can double, quadruple our production, and save the country. Without it, financial disaster stares us in the face. In the interest, not of the farmers, but of the country, we must set agriculture free from the artificial handicap of our protective tariff. We need not fear the extinction of manufacturers. All those suited to the country will survive without doubt, and if any of them show signs of sickness under the change of climate, a simple operation, known I believe as 'tapping,' will remove the dropsical moisture from their system, and set them on their legs again.

The time has come for the farmers to take up the thread of their lives again. We have been too busy winning the war to keep tab on the important questions which need discussion now. You know, as practical farmers, what keeps us from being up to the very last notch in machinery; it is because we have not the money to pay for it (hear. hear), If a tractor costs $400 instead of $900 twice as many people would buy them (hear, hear and applause).

Soldiers Not Taxed to Death

"And this brings me to a very brief thought on another of the economic problems of reconstruction, the reinstatement of our returned soldiers in civil life. Very many of them have signified their desire to farm, for there is no place where they will be safer or where they will do more good in the upbuilding of the country than in its rural life. I think the return of the soldiers to the soil would be a grand thing for Canada. I think the communities in Ontario would welcome an infusion of them. I would like to see the scheme carried out that is in mind, to have them teach our schools; I believe it would tone up our life immensely, for we need a different viewpoint. But, when they have been planted on farms, when they commence to till the ground they have fought to save, in the name of justice and freedom let us see that they are given economic justice, let us see that no privileged class are given the power, through a protective tariff, to take their rewards from them. Unless we do this, though we may place them on the land, they will not, cannot stay there.

"The worst of it is, the people of this country cannot depend on either the wisdom or the good intentions of their leaders. Time and again have we been committed to issues involving serious consequences for no object but to win an election.

"In 1878 Sir John Macdonald introduced his N.P. to win an election, though it is said he had also a speech advocating free trade in his pocket, and would have used it had MacKenzie taken the other side.

"Sir Wilfrid Laurier launched the Grand Trunk Pacific to provide an election cry, and it has been a burden to us ever since, but in 1911 the people of Canada were stampeded into rejecting the best and wisest thing we ever had a chance on, which would not only have increased our prosperity, but would leave cemented the bonds of friendship between ourselves and our great friend and ally to the south.

"They were stampeded by *the most wicked and traitorous cry ever raised, a cry which was intended to arouse, for mere election purposes, that most dangerous thing in the world, national hatred.* You remember the slogan, as false as it was wicked, 'No truck nor trade with the Yankees.'

"I say, and say it solemnly, that the man who arouses national hatred is a criminal of the worst type, and that the punishment for these things should fall upon his head. The last thing to arouse in human nature is national hatred. This war has done one great good. To-day down town I saw a procession that gladdened my heart; it was the Union Jack and Old Glory side by side, going along the street. Thank God for that! (Loud applause). Our destiny may be under the Union Jack, and a glorious one, but we want the two side by side forever in friendship (hear, hear and applause).

"We need a new National Policy. That policy I believe is found in the platform of the Canadian Council of Agriculture. With its trade policy I agree, with its taxation policy I agree. There is just one thing I would like added to it, and that is, the entire renovation of our Parliamentary life and the thorough cleansing of the Angean stable of Canadian politics, a thing which can only be done by the citizens arousing themselves, shaking free of party shackles and electing to Parliament men who will indeed represent them."

At the conclusion of the address there was loud and long continued applause.

THE PRESIDENT: We are all delighted with Mr. Drury's address. We have not time to discuss it now, but hope there may be an opportunity a little further on.

The announcement was made that the fund raised to pay Mr. Cross's fine had reached the sum of $504.37.

DR. J. G. RUTHERFORD

THE new member of the Dominion Railway Commission, Dr. J. G. Rutherford, of Calgary, is well known particularly to the livestock men of Canada, as a member of the Manitoba Legislature, and later a member of the Dominion Parliament, where he proved himself a valuable friend of livestock breeders and feeders. Later, when he was appointed Livestock Commissioner for Canada he came into national and even continental reputation. After leaving this service he became head of the C.P.R.'s agricultural departments at Calgary and as such did much to place agricultural interests in their proper relationship with this big railway corporation. Branch farms and livestock policies were the immediate fruits of his work. Now that he is called to the Railway Board, he combines the knowledge of railway matters with his zeal for livestock and farmers' interests generally, and ought to be a splendid representative of agriculture on this Board.

A pleasing event took place at Chicago during the week of the International Livestock Show. Two Canadians, Hon. Duncan Marshall and Dr. Rutherford, were escorted in the sanctum sanctorum of the celebrated Saddle and Sirloin Club by the presiding genius, Alvin H. Sanders, editor of the "Gazette," and here were undraped before them life-size paintings of each of them to adorn the walls of these galleries, where the shades of the livestock men of the past congregate. Dr. Rutherford's oil painting was given to the club by the livestock men of Canada, while the Shorthorn breeders of the United States presented that of Hon. Duncan Marshall to the club. Dr. Rutherford made a characteristic reply in happy tern He has ever been noted for his Scotch stories, his prevailing good humor and his peculiarly fitting words to the occasion at hand.—F. M. C.

ONE COUNTY'S COMMUNITY WORK

Some Pioneer Movements for Better Country Life

By ETHEL M. CHAPMAN

FOR some time J. W. Stark has been setting the heather on fire in his work with the farmers of Peel County. We have here an account of some of the larger community life movements made possible through his vision, initiative and executive ability. What the outcome of this pioneer work will mean to rural Ontario only the years will tell.—EDITOR.

J. W. Stark, B.S.A., Agricultural Representative for Peel County.

When the Department of Agriculture's car stops at a country school.

THERE the doctrine of good farming is leavened by a united movement for better country life, the agricultural Eldorado does not seem so very far off. In Peel County where the work of the county branch of the Department of Agriculture has spread out in devious ways from the beaten path the new order is showing itself in a very practical way. To the casual mind, some of the new ventures might not seem very closely related to agriculture at all; instead of concentrating entirely on better stock, the movement has extended to better schools, better health, better citizens; instead of only better farms the ideal is better homes, better communities—the idea seems to be that these are the really essential things to ensure good farms owned and worked and lived on by fine people from one generation to another.

There are some two thousand school children in Peel County—children with the same advantages and disvantages that you or I or any of us who grew up in the country had to enjoy or contend with. The advantages, of course, we have always known; the disadvantages are more recent discoveries. Take the matter of health for instance. For so long it has been taken for granted that Nature is capable of taking care of country children without outside aid or interference that the idea of anyone else having some responsibility is bound to meet with a certain amount of prejudice. This county, no doubt, wasn't different from any other in this respect; the thing that matters is that before the work was finished every one of the seventy-seven schools, both Public and Separate, had been examined. The movement was started by the agricultural representative and before it was well under way the Women's Institute, the inspector, the trustees and the parents had caught the enthusiasm. This has been one of the happy features of the whole campaign—in some way or other all the forces in the community have been gathered together and set in motion; they couldn't fail to make things go.

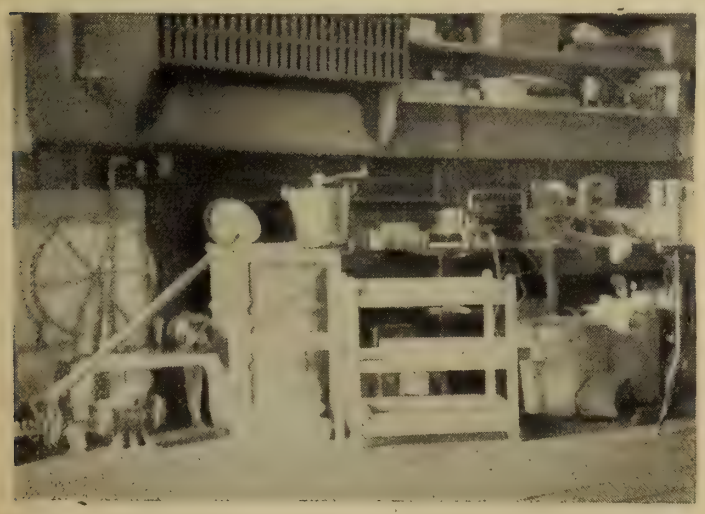
Miss Harriet Graydon, School Nurse.

Miss Katharine McIntosh, Home Demonstrator.

The neglected little cross-roads school suddenly became the most popular place in the neighborhood; it overflowed with visitors. Mothers who had never seen inside its doors before came and had a square look at the place where their children spent one-third of their time, and if they found the floors dirty and the water pail with its common drinking cup sitting in the dust of the entry, they said: "It's high time something should be done." When the doctor who examined the children sent word to the trustees that the bad heating system and the impossibility of getting good ventilation in the school were responsible for most of the bad throats and poor lungs, and that the wrong arrangement of windows was ruining a lot of children's eyes, the trustees left their teams standing in the stable right in seeding time and came to the school to discuss with the doctor just what they could do, and as far as it was possible they almost invariably did it. It may have been that they were urged on by the good-housekeeping mothers at home, perhaps it was partly because the feeling of the whole section had been aroused, anyway there was more than one school in the county that wasn't ready to open at the end of the summer holidays because the carpenters and furnace-men and painters hadn't finished with it.

FOR the children who needed medical treatment the women of the neighborhood, working through the Women's Institutes, arranged clinics. Very informal, almost homelike affairs they were, with some large, sunny, well-equipped house, fitted up for a hospital, the mothers themselves somewhere around, the local doctors assisting, but the fine work done by the best specialists in Canada with regular trained nurses in attendance. The doctors who worked at these clinics were usually pretty public-spirited, so it was possible for almost everyone to pay for having their children taken care of; for those who could not afford to pay, a grant from the Government covered the cost. And there wasn't the expense and time and worry of taking a child off to a hospital in the city and leaving it there for three days. Of course it took some courage and an endless amount of tact to carry these clinics through; there were people who didn't believe in taking out tonsils and when, in one case, a local doctor opposed the plan and advised parents against it very freely, it would seem rather difficult for a body of mere laywomen to say much. Even the manse they had secured for the clinic was refused them and they had to start all over again, leave their work and set out personally to reconvert the members of the session, which project, it would seem, should be listed among their major endeavors. Their conviction must have given them the proverbial tongues of fire, however, for they not only won over the elders, but they changed the mind of the doctor himself. On the second day of the clinic he brought in his own little girl, who was one of the severe cases in the school, and he admits now that the operation was entirely a success.

The latest thing in the way of school clinics was tried out in this county this fall, when a dentist was brought out from the city, and a complete dental establishment set up in a hall close to the public school at Streetsville. The children were examined and a report of whatever dental treatment each child needed was sent home to the parents. For fillings they paid at a moderate rate (those who could afford to pay at all; the others were treated free), but by way of stirring



Display of household equipment in the kitchen of the Agricultural office.

The Home Demonstrator in her office.

A Peel girl's canning team after their demonstration at Brampton Fair

the children's pride and interest the Institute provided for having each child's teeth cleaned free, and for each being supplied with a tooth-brush at the wholesale price of ten cents. It took a lot of tedious working out of details, as any pioneer work does, but it has meant lighting the way to a Utopia where children will never be sent home from school crying with a toothache, where the nerves and health of children and grown people alike will be free from the wear and poisoning of aching, decaying teeth, where every child will have a chance to grow up with a beautiful, perfect set that he can be proud of. About the time the work began a public meeting was held in the town where a dentist interested in work with children gave an address, and the Agricultural Representative put on a vivid set of movies, showing just how teeth troubles start and develop and just as clearly how to prevent or correct them.

THIS was one of the plans radiating from the Representative's office. The next was a greater surprise. You can usually tell from the outside of a window whether it belongs to a bachelor's quarters or whether there is a woman inside. One morning last spring the Department of Agriculture's window, which had hitherto no doubt occasionally displayed such things as seed grains and Babcock testers and incubators, blossomed out with little white doilies set demurely along the front and real brown loaves of bread with tickets stuck in the top telling what substitute for flour had been used in each. It was unmistakably home-made bread too, and appearing where it did it naturally excited some curiosity. It was the public's introduction to the first "Home Demonstrator" in Canada. The system of having a woman county agent, to work in the interests of the women and the homes of the county, just as the agricultural representative does with the men and the farms, has been in practice in the States for some time; it had never been tried out in our country and the representative for Peel thought it would be a good thing. The window displays kept appearing regularly after that first morning, but the "Home Demonstrator," Miss Katharine McIntosh, became known by other tokens.

The Department of Agriculture was unusually fortunate in finding a girl like Miss McIntosh to blaze the trail for future work of this kind. She had lived on an Ontario farm and like Ulysses, in his explorations, she "had been a part of all that she had met" there; she had graduated in domestic science from Macdonald Institute; she had been a leader in organized women's work in her home neighborhood; she had had the advantage of living in a fine community and of being one of a crowd of young people who knew how to make the most of country life—and she had a winning personality and certain other native qualities of her own, which would be desirable enough anywhere, but most important here. To really appreciate these you have to see her with her car stuck on a muddy hill, the chains wound tight around the service brake, cheerfully go on trying one thing after another until she coaxes it off after all the drivers on the road have declared it can't be moved; and you have to eat a meal that she has cooked on a limited camping equipment, and see her come in at the end of a sixteen-hour day still glowing with enthusiasm, and *perhaps more than anything else you have to see the results of her work.*

SHE came to the county at an opportune time. Some new and perplexing orders-in-council had just been passed regarding the use of substitute flours, and the women on the farms hadn't time to experiment with new flours; it was better to turn that over to the Home Demonstrator. The canning season was coming on and they wanted to save everything they could; they had all canned fruit for years, in fact their canned fruit had won quite a reputation at the county fairs, but the canning of vegetables, the canning of fruit without sugar when sugar couldn't be had, and how to preserve things by drying were new to a great many. Here again the Home Demonstrator was at their service, either to consult in her office or to go out and give a demonstration to a gathering in some farm kitchen, and more than once the men as well as their wives came to see a cold-pack canning demonstration in the schoolhouse in the evening. During the whole season these food conservation demonstrations were attended by over two thousand people. Between times the Demonstrator was busy training canning teams from the five girls' clubs in the county.

This girls' canning team idea appears to be one of the most promising things yet undertaken to make farm life more interesting to girls. For some time agricultural representatives have trained boys' stock-judging teams and seed-judging teams, and taken

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United Farm Women *of* Ontario

THE United Farm Women of Ontario were well represented at their recent convention as an organized body co-operating with the United Farmers. "One of the first reasons for our organization is to strengthen the hands of the men," said the president. "It's only through legislation that we get what we want—not through resolution. And in whatever we set out to work for as a women's organization, the men will uphold us." The secretary asked for the full co-operation of the men in getting the women of their localities organized, urging that every club organize a U. F. W. O. in connection with their local. "We are closing the year with six locals," she said. "Why should we not have six hundred at the close of the next year? The woman on the farm is too isolated and too closely confined to a round of exacting tasks. It rests pretty largely with the men to get their wives out of their kitchens at times, and to get them into their organizations."

Mrs. Geo. Brodie, President.

While co-operation with the men is one of their plans the women do not intend to give up their own individual opinions and they want co-operation in the broadest way. At the union meeting Mrs. Brodie said: "Nowhere is the co-operation of men and women closer than on the farm, and the women want to co-operate in the same way on municipal, provincial and federal matters. One of the special objects for such co-operation is the building up of community life in the country. "An audience," she explained, "could get a much better view of a play than those who are taking part. While men had been taking an active part in party politics, women had been looking on and they were not going to repeat some of the mistakes that men had made. The United Farm Women had been approached by a Women's Party, but they didn't want a Women's Party. They wanted to stand with their men for equal laws and better economic conditions all over Canada."

Another speaker, Mrs. Laws, touched on the point of co-operation in another way. "Women's part in the U. F. O. movement," she said, "is not to work in the fields side by side with their men, though all honor is due to the women overseas who have done that. That would be to establish a peasant class. Speaking of women and party politics, she said, "You men had a political bias to inherit. My father and his people were Tories from Adam. My husband and his people were Grits from Adam—both honorable men in whose judgment I have confidence, but I must use my own brain. My vote represents me. I may vote as my husband does, but if I vote that way I vote to represent him, not me."

Miss Emma Griesbach, Secretary.

A BETTER school system for the rural districts was one of the main subjects discussed in the women's meetings. Some of the following expressions of opinion from the members show how the farm women are thinking:

"There is absolutely nothing in our public school curriculum to give children a knowledge of nature or a love of the country. Everything tends citywards. Only two per cent. of the children in the public schools eventually go to the university, yet the whole curriculum is arranged according to the needs of that two per cent. Consolidated rural schools and technical training are two of the things we need."

"When our children were small they had to walk two miles to school, and in stormy weather there was no way but for their father or me to leave our work and take them. Considering this with other things we would gladly have paid $200 a year towards a consolidated school. When they were old enough to go to High School they had to go right away from us and board in town. It was said recently that 'farmers were getting rich, they could afford now to send their children to the universities and pay their board.' It was a pretty unjust way of looking at it. We shouldn't have to send our children to town and pay their board. We should have high schools in our own consolidated schools where they could come home every night."

"Before we can make any progress towards getting consolidated schools, the men and women in the country will have to be awakened to the fact that their children are the greatest asset they have — that their education is worth the expenditure of some thought and money."

"We are supposed to have free and compulsory education, but last year 9,000,000 school days were lost by the children of Ontario. Our school laws are not enforced."

Mrs. J. N. Foote, Vice-President.

The question of the present school system not being interesting to the children was brought up. Some of the women thought it was not entirely the fault of the school system—that teachers were changed too often—one woman's boy of fourteen had gone to school to nine teachers—and that many of the teachers were mere girls of eighteen, not at all fitted to have charge of a school. Several women who had been teachers themselves, however, felt that if the parents were as interested as the girl school-teacher, the schools would be in a great deal better condition. One woman said: "I taught school for twenty years. I was everything you say of the inexperienced girl-teacher at first; how anyone put up with me, I don't know. But at any time I would have been glad to welcome the mothers to visit the school. In the twenty years not five mothers have been inside the doors except at a public meeting. Mothers will have to awaken to lead the way for the children."

Mrs. Frank Webster led a discussion on how to arouse farm women to take an interest in the school. She said: "One day when our children were small, I went to visit the school. There was no well belonging to the school, but the children took the pail to a farm well near by at recess. The pail was sitting on the floor of the cloak-room with the little tin cup beside it,

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WILDFIRE

A Tale of Wild Ranch Life, a Wonderful Horse and a Girl

BY ZANE GREY

Author of "The Rainbow Trail," "Raiders of the Purple Sage," "The Light of Western Stars"

SYNOPSIS

THE story opens at Bostil's Ford in the wild country of the Colorado River. Bostil is a rancher whose affections are divided between his horses and his eighteen-year old daughter, Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen. To her aunt's disappointment, she has refused Jim Wetherby, a rich rancher of Durango. Joel Creech, the idle son of a neighboring sheep-herder, is fond of following Lucy about, and she has recently played a wild practical joke on him. Joel's father owns a horse called Blue Roan, which Bostil longs to possess—partly on account of his passionate love for blooded horses and partly because he has an unacknowledged fear that his own favorite, Sage King, may be beaten by Blue Roan in the coming races.

Bostil, Creech, Brackton, the village storekeeper, and others are now assembled at Bostil's ranch to discuss the details of the races to be held the first week in June. A two-mile race is arranged between the King and Blue Roan. The men are leaving after the meeting, when Bostil calls Creech back into the room, and again endeavors to persuade him to sell Blue Roan. Creech persistently refuses, and Bostil finally offers him two thousand dollars and three of his best horses in exchange for the horse he covets.

CHAPTER III—*Continued*

THIS was an unheard-of price to pay for any horse. Creech saw that Bostil was desperate. It was an almost overpowering temptation. Evidently Creech resisted it only by applying all his mind to the thought of his clean-limbed, soft-eyed, noble horse.

Bostil did not give Creech time to speak. "Twenty-five hundred an' Two Face along with the rest!"

"My God, Bostil—stop it! I can't *part* with Blue Roan. You're rich an' you've no heart. Thet I always knew. At least to me you never had, since I owned them two races. Didn't I beg you, a little time back, to lend me a few hundred? To meet thet debt? An' you wouldn't, unless I'd sell the hosses. An' I had to lose my sheep. Now I'm a poor man—gettin' poorer all the time. But I won't sell or trade Blue Roan, not for all you've got!"

Creech seemed to gain strength with his speech and passion with the strength. His eyes glinted at the hard, paling face of his rival. He raised a clenching fist.

"An' by G—d, I'm going to win thet race!"

During that week Lucy had heard many things about Joel Creech, and some of them were disquieting.

Some rider had not only found Joel's clothes on the trail, but he had recognized the track of the horse Lucy rode, and at once connected her with the singular discovery. Coupling that with Joel's appearance in the village incased in a heaving armor of adobe, the riders guessed pretty close to the truth. For them the joke was tremendous. And Joel Creech was exceedingly sensitive to ridicule. The riders made life unbearable for him. They had fun out of it as long as Joel showed signs of taking the joke manfully, which was not long, and then his resentment won their contempt. That led to sarcasm on their part and bitter anger on his. It came to Lucy's ears that Joel began to act and talk strangely. She found out that the rider Van had knocked Joel down in Brackton's store and had kicked a gun out of his hand. Van laughed off the rumor and Brackton gave her no satisfaction. Moreover, she heard no other rumors. The channels of gossip had suddenly closed to her. Bostil, when questioned by Lucy, swore in a way that amazed her, and all he told her was to leave Creech alone. Finally, when Muncie discharged Joel, who worked now and then, Lucy realized that something was wrong with Joel and that she was to blame for it.

She grew worried and anxious and sorry, but she held her peace, and determined to find out for herself what was wrong. Every day when she rode out into the sage she expected to meet him, or at least see him somewhere; nevertheless days went by and there was no sign of him.

One afternoon she saw some Indians driving sheep down the river road toward the ford, and, acting upon impulse, she turned her horse after them.

LUCY seldom went down the river road. Riding down and up was merely work, and a horse has as little liking for it as she had. Usually it was a hot, dusty trip, and the great, dark, overhanging walls had a depressing effect upon her. She always felt awe at the gloomy canon and fear at the strange, murmuring red river. But she started down this afternoon in the hope of meeting Joel. She had a hazy idea of telling him she was sorry for what she had done, and of asking him to forget it and pay no more heed to the riders.

The sheep raised a dust-cloud in the sandy wash where the road wound down, and Lucy hung back to let them get farther ahead. Gradually the tiny roar of pattering hoofs and the blended bleating and baaing died away. The dust-cloud, however, hung over the head of the ravine, and Lucy had to force Sarchedon through it. Sarchedon did not mind sand and dust, but he surely hated the smell of sheep. Lucy seldom put a spur to Sarchedon; still, she gave him a lash with her quirt, and then he went on obediently, if disgustedly. He carried his head like a horse that wondered why his mistress preferred to drive him down into an unpleasant hole when she might have been cutting the sweet, cool sage wind up on the slope.

The wash, with its sand and clay walls, dropped into a gulch, and there was an end of green growths. The road led down over solid rock. Gradually the rims of the gorge rose, shutting out the light and the cliffs. It was a winding road and one not safe to tarry on in a stormy season. Lucy had seen boulders weighing a ton go booming down that gorge, during one of the sudden fierce desert storms, when a torrent of water and mud and stone went plunging on to the river. The ride through here was short though slow. Lucy always had time to adjust faculties for the overpowering contrast these lower regions presented. Long before she reached the end of the gorge she heard the sullen thunder of the river. The river was low, too, for otherwise there would have been a deafening roar.

Presently she came out upon a lower branch of the canon, into a great red-walled space, with the river still a thousand feet below, and the cliffs towering as high above her. The road led down along this rim where to the left all was open, across to the split and peaked wall opposite. The river appeared to sweep round a bold, bulging corner a mile above. It was a wide, swift, muddy, turbulent stream. A great bar of sand stretched out from the shore. Beyond it, through the mouth of an intersecting canon, could be seen a clump of cottonwoods and willows that marked the home of the Creeches. Lucy could not see the shore nearest her, as it was almost directly under her. Besides, in this narrow road, on a spirited horse, she was not inclined to watch the scenery. She hurried Sarchedon down and down, under the overhanging brows of rock, to where the rim sloped out and failed. Here was a half-acre of sand, with a few scant willows, set down seemingly in a dent at the base of the giant, beetling cliffs. The place was light, though the light seemed a kind of veiled red, and to Lucy always ghastly. She could not have been joyous with that river moaning before her, even if it had been up on a level, in the clear open day. As a little girl eight years old she had conceived a terror and hatred of this huge, jagged rent so full of red haze and purple smoke and the thunder of rushing waters. And she had never wholly outgrown it. The joy of the sun and wind, the rapture in the boundless open, the sweetness in the sage—these were not possible here. Something mighty and ponderous, heavy as those colossal cliffs, weighted down her spirit. The voice of the river drove out any dream. Here was the incessant frowning presence of destructive forces of nature. And the ford was associated with catastrophe—to sheep, to horses and to men.

Lucy rode across the bar to the shore where the Indians were loading the sheep into an immense rude flatboat. As the sheep were frightened, the loading was no easy task. Their bleating could be heard above the roar of the river. Bostil's boatmen, Shugrue and Somers, stood knee-deep in the quicksand of the bar, and their efforts to keep free footed were as strenuous as their handling of the sheep. Presently the flock was all crowded on board, the Indians followed, and then the boatmen slid the unwieldy craft off the sandbar. Then, each manning a clumsy oar, they pulled up-stream. Along shore were whirling, slow eddies, and there rowing was possible. Out in that swift current it would have been folly to try to contend with it, let alone make progress. The method of crossing was to row up along the shore as far as a great cape of rock jutting out, and there make into the current, and while drifting down pull hard to reach the landing opposite. Heavily laden as the boat was, the chances were not wholly in favor of a successful crossing.

Lucy watched the slow, laborious struggle of the boatmen with the heavy oars until she suddenly remembered the object of her visit down to the ford. She appeared to be alone on her side of the river. At the landing opposite, however, were two men; and presently Lucy recognized Joel Creel and his father. A second glance showed Indians with burros, evidently waiting for the boat. Joel Creech jumped into a skiff and shoved off. The elder man, judging by his motions, seemed to be trying to prevent his son from leaving the shore. But Joel began to row up-stream, keeping close to the shore. Lucy watched him. No doubt he had seen her and was coming across. Either the prospect of meeting him or the idea of meeting him there in the place where she was never herself made her want to turn at once and ride back home. But her stubborn sense of fairness overruled that. She would hold her ground solely in the hope of persuading Joel to be reasonable. She saw the big flatboat sweep into line of sight at the same time Joel turned into the current. But while the larger craft drifted slowly the other way, the smaller one came swiftly down and across. Joel swept out of the current into the eddy, rowed across that, and slid the skiff up on the sand-bar. Then he stepped out. He was bareheaded and barefooted, but it was not that which made him seem a stranger to Lucy.

"Are you lookin' fer me?" he shouted.

Lucy waved a hand for him to come up.

Then he approached. He was a tall, lean young man, stoop-shouldered and bow-legged from much riding, with sallow, freckled face, a thin fuzz of beard, weak mouth and chin, and eyes remarkable for their small size and piercing quality and different color. For one was gray and the other was hazel. There was no scar on his face, but the irregularity of his features reminded one who knew that he had once been kicked in the face by a horse.

Creech came up hurriedly, in an eager, wild way that made Lucy suddenly pity him. He did not seem to remember that the stallion had an antipathy for him. But Lucy, if she had forgotten, would have been reminded by Sarchedon's action.

"Look out, Joel!" she called, and she gave the black's head a jerk. Sarchedon went up with a snort and came down pounding the sand. Quick as an Indian Lucy was out of the saddle.

"Lemme your quirt," said Joel, showing his teeth like a wolf.

"No. I wouldn't let you hit Sarch. You beat him once and he's never forgotten," replied Lucy.

The eye of the horse and the man met and clashed, and there was a hostile tension in their attitudes. Then Lucy dropped the bridle and drew Joel over to a huge drift-log, half buried in the sand. Here she sat down, but Joel remained standing. His gaze was now all the stranger for its wistfulness. Lucy was quick to catch a subtle difference in him, but she could not tell wherein it lay.

"What'd you want?" asked Joel.

"I've heard a lot of things, Joel," replied Lucy, trying to think of just what she wanted to say.

"Reckon you have," said Joel, dejectedly, and then he sat down on the log and dug holes in the sand with his bare feet.

Lucy had never before seen him look tired, and it seemed that some of the healthy brown of his cheeks had thinned out. Then Lucy told him, gradually, a few of the rumors she had heard.

"All thet you say is nothin' to what's happened," he replied, bitterly. "Them riders mocked the life an' soul out of me."

"But, Joel, you shouldn't be so—so touchy," said Lucy, earnestly. "After all, the joke *was* on you. Why didn't you take it like a man?"

"But they knew you stole my clothes," he protested.

"Suppose they did. That wasn't much to care about. If you hadn't taken it so hard they'd have let up on you."

"Mebbe I might have stood that. But they taunted me with bein'—loony about you."

Joel spoke huskily. There was no doubt that he had been deeply hurt. Lucy saw tears in his eyes, and her first impulse was to put a hand on his and tell him how sorry she was. But she desisted. She did not feel at her ease with Joel.

"What'd you and Van fight about?" she asked, presently.

Joel hung his head. "I reckon I aint a-goin' to tell you."

"You're ashamed of it?"

Joel's silence answered that.

"You said something about me?" Lucy could not resist her curiosity, back of which was a little heat. "It must have been—bad—else Van wouldn't have struck you."

"He hit me—he knocked me flat," passionately said Joel.

"And you drew a gun on him?"

"I did, an' like a fool I didn't wait till I got up. Then he kicked me! . . . Bostil's Ford will never be big enough fer me an' Van now."

"Don't talk foolish. You won't fight with Van. . . . Joel, maybe you deserved what you got. You say some—some rude things."

"I only said I'd pay you back," burst out Joel.

"How?"

"I swore I'd lay fer you—an' steal your clothes—so you'd have to run home naked."

There was indeed something lacking in Joel, but it was not sincerity. His hurt had rankled deep and his voice trembled with indignation.

"But, Joel, I don't go swimming in spring-holes," protested Lucy, divided between amusement and annoyance.

"I meant it, anyhow," said Joel, doggedly.

"Are you absolutely honest? Is that all you said to provoke Van?"

"It's all, Lucy, I swear."

She believed him, and saw the unfortunate circumstance more than ever her fault. "I'm sorry, Joel. I'm much to blame. I shouldn't have lost my temper and played that trick with your clothes. . . . If you'd only had sense enough to stay out till after dark! But no use crying over spilt milk. Now, if you'll do your share I'll do mine. I'll tell the boys I was to blame. I'll persuade them to let you alone. I'll go to Muncie—"

"No you won't go cryin' small fer me!" blurted out Joel.

Lucy was surprised to see pride in him. "Joel, I'll not make it appear—"

"You'll not say one word about me to any one," he went on, with the blood beginning to darken his face. And now he faced her. How strange the blaze in his differently colored eyes! "Lucy Bostil, there's been thet done an' said to me which I'll never forgive. I'm no good in Bostil's Ford. Mebbe I never was much. But I could get a job when I wanted it an' credit when I needed it. Now I can't get nothin'. I'm no good!. . . I'm no good! An' it's your fault!"

"Oh, Joel, what can I do?" cried Lucy.

"I reckon there's only one way you can square me," he replied, suddenly growing pale. But his eyes were like flint. He certainly looked to be in possession of all his wits.

"How?" queried Lucy, sharply.

"You can marry me. Thet'll show thet gang! an' it'll square me. Then I'll go back to work an' I'll stick. Thet's all, Lucy Bostil."

Manifestly he was laboring under strong suppressed agitation. That moment was the last of real strength and dignity ever shown by Joel Creech.

"But, Joel, I can't marry you—even if I am to blame for your ruin," said Lucy, simply.

"Why?"

"Because I don't love you."

"I reckon thet won't make any difference, if you don't love someone else."

Lucy gazed blankly at him. He began to shake, and his eyes grew wild. She rose from the log.

"Do you love anybody else?" he asked, passionately.

"None of your business!" retorted Lucy. Then, at a strange darkening of his face, an aspect unfamiliar to her, she grew suddenly frightened.

"It's Van!" he said, thickly.

"Joel, you're a fool!"

That only infuriated him.

"So they all say. An' they got my old man believin' it, too. Mebbe I am. . . . But I'm a-goin to kill Van!"

"No! No! Joel, what are you saying? I don't love Van. I don't care any more for him than for any other rider—or—or you."

"Thet's a lie, Lucy Bostil!"

"How dare you say I lie?" demanded Lucy. "I've a mind to turn my back on you. I'm trying to make up for my blunder and you—you insult me!"

"You talk sweet . . . but talk isn't enough. You made me no-good. . . . Will you marry me?"

"I will not!" And Lucy, with her blood up, could not keep contempt out of voice and look, and she did not care. That was the first time she had ever shown anything approaching ridicule for Joel. The effect was remarkable. Like a lash upon a raw wound it made him writhe; but more significant to Lucy was the sudden convulsive working of his features and the wildness of his eyes. Then she turned her back, not from contempt, but to hurry away from him.

He leaped after her and grasped her with rude hands.

"Let me go!" cried Lucy, standing perfectly motionless. The hard clutch of his fingers roused a fierce, hot anger.

Joel did not heed her command. He was forcing her back. He talked incoherently. One glimpse of his face added terror to Lucy's fury.

"Joel, you're out of your head!" she cried, and she began to wrench and writhe out of his grasp. Then ensued a short, sharp struggle. Joel could not hold Lucy, but he tore her blouse into shreds. It seemed to Lucy that he did that savagely. She broke free from him, and he lunged at her again. With all her strength she lashed his face with the heavy leather quirt. That staggered him. He almost fell.

Lucy bounded to Sarchedon. In a flash she was up in the saddle. Joel was running toward her. Blood on his face. Blood on his hands. He was not the Joel Creech she knew.

"Stop!" cried Lucy, fiercely. "I'll run you down!"

The big black plunged at a touch of spur and came down quivering, ready to bolt.

Creech swerved to one side. His face was lividly white except where the bloody welts crossed it. His jaw seemed to hang loosely, making speech difficult.

"Jest fer—thet—" he panted, hoarsely, "I'll lay for you—an' I'll strip you—an' I'll tie you on a hoss—an' I'll drive you naked through Bostil's Ford!"

Lucy saw the utter futility of all her good intentions. Something had snapped in Joel Creech's mind. And in hers kindness had given precedence to a fury she did not know was in her. For the second time she touched a spur to Sarchedon. He leaped out, flashed past Creech, and thundered up the road. It was all Lucy could do to break his gait at the first steep rise.

CHAPTER IV

THREE wild-horse hunters made camp one night beside a little stream in the Sevier Valley, five hundred miles, as a crow flies, from Bostil's Ford.

These hunters had a poor outfit, excepting, of course, their horses. They were young men, rangy in build, lean and hard from life in the saddle, bronzed like Indians, still-faced, and keen-eyed. Two of them appeared to be tired out, and lagged at the camp-fire duties. When the meagre meal was prepared they sat, cross-legged, before a ragged tarpaulin, eating and drinking in silence.

The sky in the west was rosy, slowly darkening. The valley floor billowed away, ridged and cut, growing gray and purple and dark. Walls of stone, pink with the last rays of the setting sun, inclosed the valley, stretching away toward a long, low, black mountain range.

The place was wild, beautiful, open, with something nameless that made the desert different from any other country. It was, perhaps, a loneliness of vast stretches of valley and stone, clear to the eye, even after sunset. That black mountain range, which looked close enough to ride to before dark, was a hundred miles distant.

The shades of night fell swiftly, and it was dark by the time the hunters finished the meal. Then the campfire had burned low. One of the three dragged branches of dead cedars and replenished the fire. Quickly it flared up, with the white flame and crackle characteristic of dry cedar. The night wind had risen, moaning through the gnarled, stunted cedars near by, and it blew the fragrant wood-smoke into the faces of the two hunters, who seemed too tired to move.

"I reckon a pipe would help me make up my mind," said one.

"Wal, Bill," replied the other, dryly, "your mind's made up, else you'd not say smoke."

"Why?"

"Because there aint three pipefuls of thet precious tobacco left."

"Thet's one apiece, then. . . Lin, come an' smoke the last pipe with us."

The tallest of the three, he who had brought the firewood, stood in the bright light of the blaze. He looked the born rider, light, lithe, powerful.

"Sure, I'll smoke," he replied.

Then, presently, he accepted the pipe tendered him, and, sitting down beside the fire, he composed himself to the enjoyment which his companions evidently considered worthy of a decision they had reached.

"So this smokin' means you both want to turn back?" queried Lin, his sharp gaze glancing darkly bright in the glow of the fire.

"Yep, we'll turn back. An', Lordy! the relief I feel!" replied one.

"We've been long comin' to it, Lin, an' thet was for your sake," replied the other.

Lin slowly pulled at his pipe and blew out the smoke as if reluctant to part with it. "Let's go on," he said, quietly.

"No. I've had all I want of chasin' thet damn wild stallion," returned Bill, shortly.

The other spread wide his hands and bent an expostulating look upon the one called Lin. "We're two hundred miles out," he said. "There's only a little flour left in the bag. No coffee! Only a little salt! All the hosses except your big Nagger are played out. We're already in strange country. An' you know what we've heerd of this an' all to the south. It's all canons, an' somewheres down there is thet awful canon none of our people ever seen. But we've heerd of it. An awful cutup country."

He finished with a conviction that no one could say a word against the common sense of his argument. Lin was silent, as if impressed.

Bill raised a strong, lean, brown hand in a forcible gesture. "We can't ketch Wildfire!"

That seemed to him, evidently, a more convincing argument than his comrade's.

"Bill is sure right, if I'm wrong, which I aint," went on the other. "Lin, we've trailed thet wild stallion for six weeks. Thet's the longest chase he ever had. He's left his old range. He's cut out his band, an' left them, one by one. We've tried every trick we know on him. An' he's too smart for us. There's a hoss! Why, Lin, we're all but gone to the dogs chasin' Wildfire. An' now I'm done, an' I'm glad of it."

There was another short silence, which presently Bill opened his lips to break.

"Lin, it makes me sick to quit. I aint denvin' thet for a long time I've had hopes of ketchin' Wildfire. He's the grandest hoss I ever laid eyes on. I reckon no man, onless he was an Arab, ever seen as good a one. But now, thet's neither here nor there. We've got to hit the back trail."

"Boys, I reckon I'll stick to Wildfire's tracks," said Lin, in the same quiet tone.

Bill swore at him, and the other hunter grew excited and concerned.

"Lin Slone, are you gone plumb crazy over thet red hoss?"

"I—reckon," replied Slone. The working of his throat as he swallowed could be plainly seen by his companions.

Bill looked at his ally as if to confirm some sudden understanding between them. They took Slone's attitude gravely and they wagged their heads doubtfully, as they might have done had Slone just acquainted them with a hopeless and deathless passion for a woman. It was significant of the nature of riders that they accepted his attitude and had consideration for his feelings. For them the situation subtly changed. For weeks they had been three wild-horse wranglers on a hard chase after a valuable stallion. They had failed to get even close to him. They had gone to the limit of their endurance and of the outfit, and it was time to turn back. But Slone had conceived that strange and rare longing for a horse—a passion understood, if not shared, by all riders. And they knew that he would catch Wildfire or die in the attempt. From that moment their attitude toward Slone changed as subtly as had come the knowledge of his feeling. The gravity and gloom left their faces. It seemed they might have regretted what they had said about the futility of catching Wildfire. They did not want Slone to see or feel the hopelessness of his task.

"I tell you, Lin," said Bill, "your hoss Nagger's as good as when we started."

"Aw, he's better," vouchsafed the other rider. "Nagger needed to lose some weight. Lin, have you got an extra set of shoes for him?"

"No full set. Only three left," replied Lin, soberly.

"Wal, thet's enough. You can keep Nagger shod. An' *mebbe* thet red stallion will get sore feet an' go lame. Then you'd stand a chance."

"But Wildfire keeps travelin' the valleys—the soft ground," said Slone.

"No matter. He's leavin' the country, an' he's bound to strike sandstone sooner or later. Then by gosh! mebbe he'll wear off them hoofs."

"Say, can't he ring bells offen the rocks?" exclaimed Bill. "Oh, Lordy! What a hoss!"

"Boys, do you think he's leavin' the country?" inquired Slone, anxiously.

"Sure he is," replied Bill. "He aint the first stallion I've chased off the Sevier range. An' I know. It's a stallion thet makes for new country, when you push him hard."

To be continued

The Girl *and* Mrs. Grundy

Before She Learns to Guard the Social Ideal the Average Girl Rebels Against "the Proper Thing"

By VIRGINIA BLAIR

"Ah, wasteful woman, she who may
On her sweet self set her own price,
Knowing he cannot choose but pay.
How has she cheapened Paradise!"

THERE is this to be said, that the dignity of the social fabric rests upon woman. It is woman who sets the pace. Chesterton puts it thus:

"The woman has a fixed and very well founded idea that if she does not insist on good manners nobody else will. Babies are not always strong on the point of dignity, and grown-up men are quite unpresentable. It is true that there are many very polite men, but none that are not either fascinating women or obeying them."

Yet before she settles down, as it were, to be guardian of the social ideal, the average girl goes through a season of revolt against the doctrine of "the proper thing." Strong in the sense of her ability to manage her own life in her own way, she wonders why there must be built about her such barriers of decorum. Betty Dear, for example, rebels daily at the restrictions which are placed upon her. She wants to be set free from the bondage of chaperonage; she wants to go and come as she will; she wants to choose her own friends; she wants to wear the thinnest silk stockings, and the sheerest waists, and the highest heels, and all the tinkling and hanging chains which are in fashion. And because her mother says that these extremes and eccentricities are not in good taste, or because she insists that, until her daughter is more mature, she shall be guided by those who are older and wiser than herself, Betty Dear chafes; just as her best friend, Lucia, chafes, when her mother refuses to have cigarettes passed after their very simply served company dinners.

"Mother, it is so provincial to think that because we never have done such things, we can't do them now. It is so narrow."

That is the rebuke which flaming youth gives to age. The narrow-mindedness of mothers is a thing over which, when girls get together, they wax eloquent.

Yet are they so narrow, these mothers of ours? Isn't there, back of their demands upon us, something of the instinct which makes men hang up "Safety First" signs in the street-cars? You see, our mothers want us to be safe. They don't want us to take chances. They want us to be happy, and they know that the women who range themselves on the side of good manners and good morals, of refinement, neatness, and "niceness," are the happy women. They realize vaguely, perhaps, but none the less strongly, that the women who have for centuries guarded the dignity of nations have not been the painted and patched and powdered ones whose names stain the pages of history, but rather the serene, if somewhat obscure, gentlewomen whose standards had to do with plain living and high thinking.

A wise French woman, writing to Ruskin at the time when France mourned the wreck of her prosperity, said:

"It is the share, the sad and the large share, that French society and its recent habits of luxury, of expense, of dress, of indulgence in every kind of extravagant dissipation, has to lay at its own door in its actual crisis of misery, ruin, and humiliation.

"Deeply and fearfully impressed by what my own country has incurred and is suffering, I can not help feeling sorrowful when I see, in England, signs of our besetting sins appearing also. Paint and chignons, slang and the reading of doubtful moral novels, are in themselves small offences, yet they are quick and tempting conveyances on a very dangerous highroad.

"I would that all Englishwomen knew how they are looked up to from abroad, what a high opinion, what honor and reverence, we foreigners have for their principles, their truthfulness, the fresh and pure innocence of their daughters, the healthy youthfulness of their lovely children.

"Far be it from me to preach the contempt of all that can make life lovable and wholesomely pleasant. I love nothing better than to see a woman nice, neat, elegant, looking her best in the prettiest dress that her taste and purse can afford; or your bright, fresh girls fearlessly and perfectly sitting their horses, or adorning their houses, as pretty as care and trouble and refinement can make them.

"*It is the degree beyond that* which to us has proved fatal, and that I would our example could warn you from."

Now is there anything narrow-minded in that? Is it not, rather, a true presentation of the evils which follow vanity and frivolity, of the influence of high ideals upon civilization?

Mrs. Grundy, the Good Fairy of Society

Your mother's sense of "the proper thing" you will perceive, therefore, does not belong merely to herself; it belongs, rather, to all women of the better class. And this sense of propriety has been given a personality, and a feminine personality at that, and is known by the name of "Mrs. Grundy."

"Mrs. Grundy," says Angelica, who, up to this time, has been glad to adventure with me, but who is beginning to fear the things we are meeting by the way, "Mrs. Grundy is an old witch."

"She is the fairy godmother of society. We couldn't get along without her."

"I could get along without her," Angelica announced with decision. "I am going to tell you what happened the other day, Virginia—a perfectly innocent thing, and yet I haven't a doubt that I am being criticized and talked about and mourned over, by a lot of old cats."

Gossip and a Girl's "Good Time"

"And I haven't a doubt but you deserve it." Angelica is young and pretty, and she loves what she calls "a good time." But her definition of "a good

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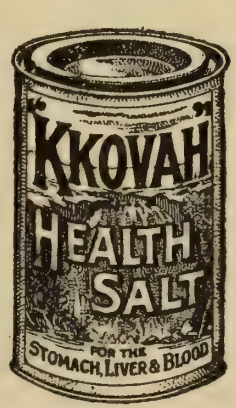

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REMEMBER THE NAME
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time" has to do often with her unconventional and daring.

"I don't deserve it. I simply went for a ride with Winthrop Lane. I met him down-town on my way to the library, and he asked me to get in, and—and we rode out into the country, and then he asked me to dine with him, and we stopped at a little place at the crossroads, and had the funniest ham-and-egg dinner, cooked by the dearest little German lady, and then we started back—and something happened to the engine and an inner tube, and it was midnight before we got in. I telephoned to mother from the road-house, but she was frantic when I reached home, and she cried and said that all the neighbors would be talking about it, and when I said that I couldn't help it if the engine went to pieces and the tire was rotten, she said that I shouldn't have gone in the first place. And that's perfectly silly, Virginia. Girls in these days—"

"Girls in these days," I stated, "as in other days, are expected to do the proper thing."

Angelica gave me a sort of "thou too" look. "Of course, if you are going to agree with mother," she said with some asperity.

I find that there is a disposition among the girls who give me their confidences to expect me *not* to agree with their mothers. I don't know why this is, unless the wish begets the expectation. It is better to agree with a mother who is right than with a daughter who is wrong, isn't it?

And Angelica is wrong, dead wrong. But I didn't put it in that way to her.

"If you had stayed within city limits, or if you had taken someone else with you, it would have been wiser, Angelica," I said.

"But we love the country roads, Virginia, and we like to go alone, and I wouldn't have missed that ducky dinner for anything—and if all the old cats in the neighborhood want to talk, let them."

What Society Expects

"They aren't old cats, Angelica. They represent Society, and you can't afford to defy Society. Society knows the chances that a girl takes when she goes, unchaperoned and unprotected, with a man who may or may not have her welfare at heart. It expects a girl to be happily and safely at home at an early hour, and these are wise expectations, not foolish ones."

"Didn't you ever do any foolish things?" Angelica asked.

"Yes. I remember very well a long ride when I was just sixteen. I was at a winter resort with my grandmother. My health had not been good, so I had been taken from school, and was having a long and glorious holiday, with dances in the evening, and with all the gaiety and glitter and good times that are to be found at such places. The man who took me to ride was older than I, but I was immediately caught by his charm of manner and his romantic appearance. I told my grandmother that we would be gone only a few minutes, and that we would keep within the bounds of the little town.

"We were gone two hours, and we drove home in a misty, moisty rain. I blush now as I think of the silly things the man said to me; nothing wrong, but fulsomely sentimental. He simply wouldn't listen when I said that I had promised to get back. He said that I was charming, and he meant to see as much of me as possible. I liked the things he said, because I believed that he meant them, and I reached home with cheeks glowing. My indignant little grandmother came at once to my room and laid down the law. The next time I did such a thing, she said, I was to go straight back to my mother. Well, I wanted to stay, so I agreed to limit my acquaintance with the fascinating gentleman to the most extreme formality. But I agreed rebelliously. I was perfectly sure of the innocence of my little outing. You can fancy how stunned I was to find a little later that my gay cavalier was married and had a daughter older than I. You can fancy, too, my increased respect for my little grandmother."

"Oh, but Winthrop Lane!" said Angelica; "I've known him all my life, and it's different."

"In a way it is different, but why doesn't he come to your house and ask you to go with him, Angelica? Why does he pick you up on the street?"

She stared at me. "Pick me up?"

"Does he ever call for you?"

"No-no—"

"Yet when he takes Marjorie Martin out, he calls for her, and brings her home promptly; and when he goes out late, he asks her mother. And Marjorie rides with him more than you do."

A Man's Way With a Foolish Maid

Angelica caught her breath. I had hit her hard. But she braved it out. "He likes me just as well as he does Marjorie."

"Are you sure?" I asked.

Angelica flamed, but I saw that she was not sure.

"If I thought that Winthrop Lane," she said hotly, "would ask me to do a thing, and then respect me less for doing it—oh, Virginia, why did you say it?"

"Because I want you to wait until Winthrop Lane calls for you properly, and treats you as he does Marjorie. The very fact that he treats you differently shows that he makes a distinction between you. If he cares for you, Angelica, he'll call at your father's house for you. He will be glad to respect your mother's wish that you shall come in early; he will be glad to do anything in the whole, wide world that you think is right and proper. He won't resent it, if he cares. Dear heart, he will like you just a little bit better, if you make him show you the deference which he is showing Marjorie."

"But if he doesn't care, Virginia?"

"Then is it worth risking all that people may say of you?"

Angelica is nothing that is not honest. "No, it isn't," she said, "and I see what you mean. But just the same, I've got it in for Mrs. Grundy."

The Larger Freedom

I think many girls, like Angelica, "have it in for Mrs. Grundy." Yet you and I, who have agreed to take life as a great adventure, are going to find that our liberty is increased rather than hampered by observing her mandates, and that in listening to her we shall obtain the larger freedom which comes to those who observe the higher laws. Isn't it the good little girl at school who gets the rewards and the holidays and the happy times? Well, life is just like that. If we obey the rules, we get the rewards.

"Do you mean to tell me," demands Betty Dear, "that we should regulate our conduct by what people say?"

No. To listen to every criticism leads to self-consciousness, and one's own self-respect must, in the first analysis, be one's guide. But what Society collectively has to say on many subjects is worth listening to. For generations it has built up a code which is meant to be protective, and which is protective, as our form of government is protective when it builds our navies, trains our armies, and puts policemen on the street-corners. You and I go through life unconscious of those who are keeping guard over us, but we would be conscious, if they were not there, of the disorder and danger of our streets, and of the menace to our liberty from encroaching and covetous countries. And in like manner, if there were no social code, we should feel the effect at once in the laxity of manner and morals, and in the necessity, which would at once arise, to be on our guard against those who were no longer restrained by public opinion.

It is Peggy who says that "goody-goody" people are insipid. And, alas, I am afraid that what Peggy really means is that *good* people are insipid. Yet Shakespeare did not think so when he made his heroines gentlewomen. For that is what they are. Not one of them can be accused of rowdyism or of coarseness. One cannot for a moment think of Rosalind as smoking a cigarette, or of Portia as dancing a turkey-trot. Yet they did not lack for adventure. They were frankly happy, sweet; having, usually, a good time—but never with a loss of dignity. Juliet, in spite of her impassioned eloquence, is always

a lady in her loveliness. And surely you cannot call Rosalind insipid, or Portia narrow-minded. With all her flawless feminine charm, Portia combines wisdom and commonsense, and Rosalind is never unwomanly, even when her wit flashes bright as a diamond.

Peggy insists that Shakespeare's heroines are out of date—and that the heroines of our modern novels have a "peach of a time," that the men are all in love with them—in spite of the fact that they break the social laws—and that not one of them cares a copper what the world says of them.

Well, you may take your choice. For my part, I'd rather be a Rosalind than the sordid little heroine of the "Salamander." Wouldn't you? And anyhow, when it comes to that, there's little Peggy's own experience.

Peggy is just twenty—and very pretty. She is a stenographer, and she and her mother have a little four-room flat. Before they came to the big city, Peggy lived a pleasant, quiet life in a pleasant, quiet town; but now she wants to do as the Romans do, and when her mother warns her, Peggy complains—and brings her complaints to me.

"There isn't a bit of harm, and mother is so fussy."

You see, it's mother's narrow-mindedness again!

In this particular instance, Peggy had been to the theatre, and to supper afterward, with a man whom she met in the office, a client of her employer. He has never called on her, and he has never met her mother.

"Where did you go after the theatre?"

Peggy told me, and I had a vision of her in that incongruous crowd. Peggy is as fresh as a daisy, and the restaurant to which she went is usually filled with poppy women and tulip women and tuberose women—the exotic bloom of femininity. And there was Peggy, all innocence! And when she danced, for she did dance in and out among the tables, she was gazed at and commented on by men who weren't fit to touch the tips of her fingers, and by women who would not under any circumstances have been allowed to cross the threshold of her own little apartment.

"Peggy," I told her honestly, "I don't think it was very—nice."

"Why wasn't it? Why wasn't it, Virginia?" Peggy demanded. "Nothing happened."

"Yes, something did happen, Peggy," I said, "and the thing which happened was that you lost—your background."

Peggy stared. "What do you mean?"

"Well," I said, "it is this way. Every time that man thinks of you, he will think of you in the smoke-filled atmosphere of a questionable café. And that isn't your real background, Peggy. Your real background is your own pretty living-room with its shaded lamp, and your mother coming in with her gentle greeting for your friends, and her plate of home-made cake and pitcher of lemonade, or her invitation to a simple little supper, with her snowy linen and shining silver. And the man you are going to love some day, Peggy, will want to see you with that background, and he isn't going to smirch it or smudge it with shadows. In other words, he isn't going to make you less than you are, Peggy."

I have purposely given the outline of Angelica's revolt and of Peggy's, because here we have two girls, at opposite ends of the social scale. Angelica, a little daughter of the rich; Peggy, of the workaday world. Yet they are both setting themselves against the laws which have been laid down for their protection.

It is for such girls that I have chosen the lines which head this article. Do we not really "cheapen Paradise," we who insist upon that which lowers us in the eyes of others, and eventually costs us our own self-respect? And, after all, isn't Mrs. Grundy a *dear*, to give us such timely warning: "Really you mustn't? It isn't the proper thing—and you'll regret it."

Seasonable Cookery

Red Chopped Pickle

1 quart raw white cabbage shredded.
1 quart boiled beets, chopped.
1 cup sugar.
1 tablespoon salt.
1 teaspoon pepper.
¼ teaspoon cayenne pepper.
1 cup grated horseradish.

Cover with cold vinegar, mix well and bottle.

Winter Relish

2 quarts onions.
1 cabbage and 1 cauliflower or 2 cabbages.

Sprinkle well with salt and let stand over night. In the morning drain and mince fine.

dressing for above—

1/3 cup flour.
¼ ounce tumerick.
¼ pound mustard seed.
4 cups brown sugar.
⅛ pound mustard.
1 quart vinegar.

Cook until well thickened, pour over the pickle hot and bottle.

Braized Cabbage

Melt two tablespoons butter or sweet dripping in a saucepan with one-half teaspoon salt, a little pepper and about one-half cup hot water. Add about one-quart shredded cabbage, cover closely and cook, lifting the cover and stirring occasionally with a fork that the cabbage may cook evenly and not scorch. It will cook tender in about twenty minutes.

Corn Oyster

To one cup canned corn add one beaten egg, one-fourth cup flour, and season highly with salt and pepper. Drop by spoonfuls on a hot greased griddle. When browned on one side, turn and brown on the other.

Parsnip Fritters

Mash boiled parsnips, season with salt, pepper and butter, form into cakes, roll in flour and brown in a hot frying pan with a little butter or dripping.

Parsnips may be sliced, boiled and fried in dripping. The browning in the fat gives a flavor that many people like who consider parsnips very flat-flavored when served plain or with a milk dressing.

Potato Biscuits

2 cups flour.
1 cup mashed potato.
3 teaspoons baking powder.
1 teaspoon salt.
1 tablespoon shortening.
Milk to make a rather stiff dough.

Sift flour, salt and baking powder, and work in the shortening. Add mashed potatoes, then add milk to make a rather stiff dough. Roll out one-half inch thick. Cut with a biscuit-cutter and bake fifteen minutes in a quick oven.

Baked Beans

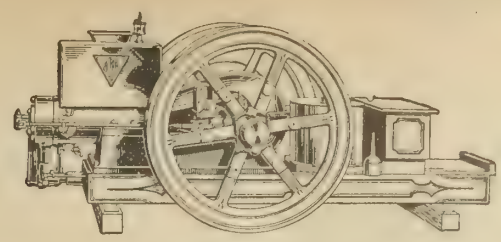
1 quart beans.
1 tablespoon salt.
1 teaspoon mustard.
¼ teaspoon soda.
¼ cup molasses or brown sugar.
½ pound salt pork or 3 tablespoons bacon fat.

Soak beans in cold water over night; drain, cover with cold water, heat to boiling point and simmer until beans are very tender but not broken. Put in an earthen bean-pot or covered lard-pail, add seasonings and bacon fat or pork, which has been scalded, scraped and cut in slices. Fill the dish with boiling water, cover and bake slowly for eight hours. Uncover for the last hour. Add more water as needed.

Carrot Pudding

1 cup grated raw carrots.
1 cup stale bread crumbs.
1 cup chopped suet.
1 cup washed and dried currants.
1 teaspoon salt.
1 cup chopped raisins.
1 cup flour.
1 cup milk.
¼ teaspoon soda.

Sift flour, salt and soda together. Combine carrots, crumbs and suet; flour, raisins and currants. Mix all together, stir thoroughly and steam four hours.



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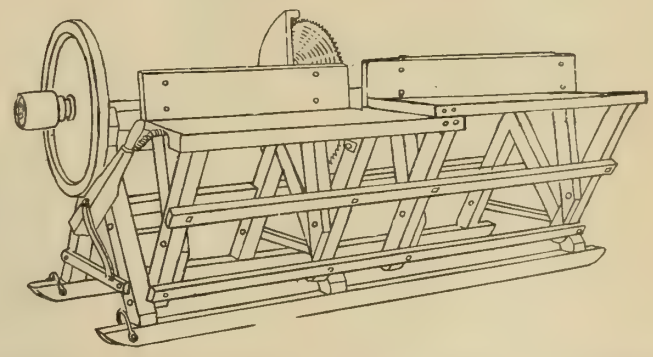

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438 Market Street Philadelphia, Pa.

Germany Skulking Behind the Rhine.

THE LURE OF THE CATTLE GAME

Continued from page 10

laugh: This farm has actually made more profit on the investment than any of my banks. Here's another thing that will surprise you: This farm and herd actually represent a larger value now than the capital of all my four banks put together, and they are mighty successful banks too."

"Well say, this is getting interesting," said the Cleveland man. "If you are through showing let's go to the hotel and have dinner together and talk some more."

"No, come with me and we will have dinner at the Saddle & Sirloin Club here at the yards and I will show you an atmosphere that you never were in before. Let's go out now and look over my exhibit."

They strolled out and looked the exhibit over. Then they made a more or less general study of other exhibits and in due time found themselves at the Saddle & Sirloin Club.

"This," said Brown, "is a unique institution. There's nothing else like it in America. The best-known livestock men of all breeds find their way into this club several times each year. These wonderful portraits you see are portraits of men who have had a part in the making of the great livestock industry. In this large room here are assembled the portraits of those who have been most conspicuous with Shorthorns in America. In this room are the old masters in the breeding art back in the days of its origin in the British Isles. In the room at the left hang the pictures of those who have had prominent identity with all of this development without particular reference to any breed. In many ways this is the most wonderful place in the world because of its contact, its associations and its significance. That is why I wanted you to come here with me. I don't expect you to feel about it as I do because you haven't spent the years that I have spent in studying this most interesting line of endeavor, and I will say to you frankly that you have just lost that much.

"I wouldn't give all I possess for the enjoyment that comes to me through this sort of relationship. Let me tell you something: The humblest herdsman can make a name for himself in this field that will endure. It doesn't seem to make any difference where you start in this business, you are rated in accordance with your ability to achieve and your knowledge of the things that pertain to this wonderful calling.

"Don't misunderstand me. I do not neglect my banking business. It is a great business. But there is no such enjoyment in the banking business that there is in this improvement of livestock, and just stop to think what it means when you have a business that affords all of this enjoyment, that places you in contact with men of great ability in all parts of the country, and at the same time insures profits on a par with the best lines of commercial enterprise. Why I have been living on my farm for more than ten years and I expect to live there as long as I am on earth. I occasionally send some of our best products to the fairs, but this is the first time I have ever exhibited at the International and I believe that this is the proudest day of my life, for I held the first winner in competition with experienced breeders from all over the United States and Canada and this first winner is out of a cow that I personally selected for my herd and by a sire that I raised on the farm. All your steel contracts and all your big merchandising deals can't compare with that kind of accomplishment."

The dinner was served and the business men from Cleveland and Youngstown seemed to be deeply impressed with the story and the setting. The three engaged a taxi later in the evening and were taken to their hotel.

The next day Brown was early at the show and his business friends hurried through their engagements and found themselves again at the arena.

When the hour came for them to depart the Cleveland man said, "Brown, I have learned more on this trip than I ever did on any trip before. You have given us some new ideas, at least they are new to us and we just want to ask the privilege of coming out to your farm and studying your proposition a little. We have a feeling that we are slipping, that it won't be very long until we will be taking a hand in your kind of a game, but you know enough of us to know that we like to succeed. We don't want to make any failures and so we would like to come to the farm and study the thing at close range a little and we have decided to come out in the spring."

Brown replied in this fashion: "Boys, no one in the world would be more welcome and if what you have seen and what I have said has inclined you in this direction, I am happier than ever. And let me say to you how proud I will be to be the means of identifying men of your class with this business."

As the train pulled into Cleveland the Youngstown man extended his hand to the Cleveland man. "This has been a great trip. I never envied a man as much as I envy Brown."

Said the Cleveland man to the Youngstown man, "I feel exactly the same. We will be with him in the spring."

NOW FOR APPLES—LIKE THESE

Continued from page 9

I think apple growing and dairying make an excellent combination. But the same sort of care must be given to orchards, if profit is to be secured from them, that is given to cows by men who make a profit in dairying.

"There must too," Mr. Baxter added, "be more attention given to the selection of varieties. By this I mean not only the selection of varieties that are good in themselves but varieties suited to the district. The Wagner and Jonathan, for example, will do better in British Columbia than they will here, while on the other hand the Duchess will not color up in B.C. as it will in this Province. Even in Ontario different varieties show different results in different sections. Mr. Macoun, horticulturist of the Dominion Experimental Farm, has done some excellent work in this matter of varieties by sections. "But for the skilled orchardist, with suitable varieties and with intelligent marketing along co-operative lines, the prospect was never brighter than it is to-day."

ECONOMICAL PRODUCTION OF CREAM

Continued from page 6

by separating the cream when it is too cool. We have long believed that milk sold in bottles should have its butterfat content stamped on the caps, or shown in some other manner. Dairy companies know exactly what this is. It would be a simple matter for them to let the purchasers know it. Then we would have eliminated that old criticism, hurled so often at practically every dairy company—that such and such a company's milk is as thin as water. It was the unanimous opinion of a convention of milk producers held some three or four years ago in New York that this innovation would come into wide practice in the very near future. We have followed this practice on our own milk bottle caps which guarantee to purchasers that our milk contains at least five per cent. butterfat. Such a practice is, of course, good business for a farmer selling pure Jersey milk, as he has to combat the strong prejudice among people that "milk is milk." However, in the long run it proves beneficial to sell a standardized product and carefully label the contents of that product. It holds purchasers.

It is gratifying to see the strides that the producers of dairy products are making in getting together to sell their goods. The story of the Borden Company's offer to sell out to the Dairymen's League in New York is enough to thrill the heart of every agriculturist. Similar examples are to be found elsewhere in America. We have a magnificent example in British Columbia. Co-operative creameries and cheese factories have become everywhere a by-word.

Somehow or other, in America, livestock farming is inseparably bound up with good farming; and of the livestock industry, dairying is by far the most important branch. We might almost believe that the keeping of livestock was absolutely necessary to the maintenance of productive soils, were it not for the fact that experience of such a country as China would deny our contention. For there, in spite of the continual drain on their land for forty centuries, in spite of the fact that they have little livestock of any kind, their soils still remain away the most productive in the world. However, in America for some time to come we will continue to refer to the dairy cow as the dairy queen. She is one of the few things about the farm that brings in a monthly cheque—she is the dairyman's real partner—her progress is coincident with progressive farming.

Canadian soldiers cheering Sir Robert Borden on the occasion of a visit to their camp.

WHAT TO DO *for the* NERVOUS CHILD

Simple Rules That Any Mother Can Follow

By GRACE C. KEMPTON

In "Health Culture"

A NORMAL child is born with a free body and a power for well-balanced activity. In rest he gives up his whole weight, and in action seldom wastes force. But all children are not normal, and many who are normal at birth fall into nervous habits and disorders during their earliest years.

In order to protect the normal condition we must closely observe it. In order to develop normal action and reaction we must know definitely what we want.

Watch the breathing of a healthy baby. See how easily each breath is drawn and how evenly! See how loosely and heavily the child's body lies upon the bed when he sleeps! Watch his eating and his motion, and from him you will get many practical suggestions. Acquire the freedom, balance, lightness in action, weight in rest, and ease, yourself, and you will be in a position to lead children on in a natural way. Grow trustful in the way that little children are trustful, and great light will be given you to preserve their trust, which is a part of their normal life. Two-thirds of the nervousness of little children is caused by their personal surroundings.

Each normal child is made in harmony with Nature's laws; to serve his best development we must make the conditions of his life agree with these same laws. We must work with Nature, not in opposition to her. Let the children grow as the daisies do; let us interfere only when we must, and the growth will be sure and strong.

A healthy baby will gain by lying unattended for an hour or more at a time. A baby trained by habit to go to sleep unrocked has begun the lesson of quiet in both body and mind. Hands off, we must read on the brow of the well-cared-for child, who, happy in his independence, would fret himself into nervousness had he interfering attendance. Make the baby comfortable in every way, then let it alone, if you want healthy nerves and a good child. Sincere watching of free and normal action will picture it in your mind. Hold to this picture, neither allowing the child to interfere nor interfering yourself. Think of yourself as the remover of obstacles to the child's growth, not as one who would mold at personal will the sensitive and fertile material. Law will do this; you must serve law. Emotional excitement or punishment is an interference, and therefore causes a nervous condition. The feelings of a child wrought to a high pitch over some misdeed, recover with a debt of waste to the beautiful forces of his nature.

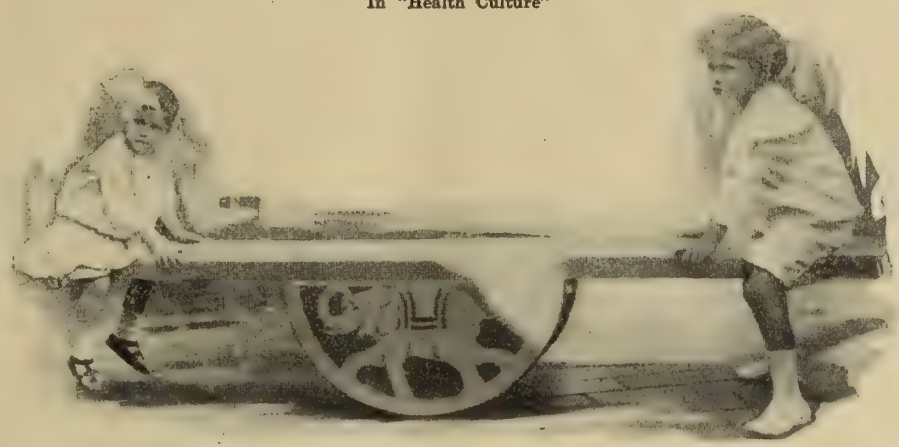
All the process applied to a little child should be simple, and planned to be as gentle as possible, and still impress. Not to interfere with the child's body, as by the omission of a meal, the influence of fear, of confinement, or other conditions of growth; nor to interfere with the child's trust by impatience, anger, or other unjust retribution, is a first lesson. What wonder a child becomes unquiet if it is shocked by those who should nurture!

A sculptor looking for beauty in a piece of marble would know that he would fail should he knock and hit with his tool each part which displeased him. Yet the little child daily receives similar shocks to his exquisite organization by interference and unquiet treatment.

The same law which makes the bud bloom and causes the tide to go and come, is at work in the little child. We must reverence that law if we seek the child's harmony, liberty, and happiness. Establishing nature as our guide, we shall get more light constantly on the orderly development of our children.

Nature's rhythm for rest and action is exact. Why not let the children, even the older ones, fall in with it? They will as surely reap good results as the cows and hens.

Imagine a hen clucking her brood out after the sun had given to all its invitation to rest! Yet many a mother decks her children and leads them forth at the hour which usually finds them asleep. And the mother has a mind with which to appreciate order, health, and harmony!



Simple tasks, simple foods, simple recreations, all help to keep the faces fresh and the bodies orderly.

The high pressure of the day has a strong tendency to develop nervous disorders in children. Only a firm and determined effort for simplicity can withstand the strength of the current. Simple tasks, simple foods, simple recreations, will all help to keep the faces fresh and the bodies orderly. The friction caused by family hurry injures children's nervous systems. Rushing to school from the table, to trains, etc. —all is an expensive drain upon the nervous forces.

Little troubles which no one has time to soothe or explain make a demand upon the sensitive system of a child which we cannot calculate. To avoid this we must train the child to regard little troubles as little. We must throw a light of peace and strength on disturbing happenings, and the child unconsciously will form the sane habit.

Observation will show that children often reflect the nervous condition of those about them, the nervous attitudes and habits. The power to sleep at will can be cultivated in every child, and no trouble should be spared to do it. It may take weeks or even months of patient effort, but the reward is very great. Different ways are needed, but with the majority simple means are successful. Make the child's body comfortable, see that he is neither hungry nor thirsty, that he has fresh air, is warm, and all previous conditions happy in a quiet way. This will be enough; an obedient, normal child will be soothed by the good conditions, and will soon, upon lying still, fall asleep. With an excitable child only a few minutes' quiet should be required on the first day. These few minutes can be so gradually lengthened that the child will feel no pressure, and will gradually learn that, with obstacles removed, sleep can come.

This training saves little children much weariness and fatigue. On a journey, during a tiresome visit, or under other trying circumstances, a nap comes easily, and smooths the rough place. I have seen children sleeping refreshingly in a railway-car instead of wearing themselves and others with fret from need of rest.

Another cause of the highly strung nervous system in the children of this century is the large amount of reading-matter that is permitted them. Much of it has no invigorating influence; it is a crude mass, and affects the child as such. A wise mother allowed her daughter of twelve one new book a year and that a good one. This book, with those of former years, could be read and re-read. This might be an extreme plan for a child of less imaginative temperament, but in the case cited it made a far simpler matter of brain impression, and did its part to prevent the much dreaded nervousness.

Nature is a safe companion and playmate and teacher for children. Unite them to her in every way, and the nerves of each child will grow more orderly. The sweet breath of a cow, and contact with her slow and peaceful animal existence, has never been known to do aught but help a child to the same sort of a low tension. The child's way of being led must be unconscious as far as possible. He has so recently departed, if at all, from Nature's paths that the association with creatures whose lives are in touch with Nature's laws is often sufficient to help him back.

Housework in its right proportion and under true conditions is a nerve-trainer to growing children, and helps to order the forces of body and mind healthfully. Housework, to be helpful, must be regular, and filled with interest and energy. Out-of-door work is good for children, if it is happily done.

The best influence from outdoor work is in company of a maturer mind, who can introduce the working children to the habits of the plants and animals among which they work. This keeps the work alive with thought and interest, and prevents monotony.

The study of any natural science has a definite influence against nervous disorder, when systematically taught. On the other hand, avoid your children's coming into contact with that which is startling and unnatural. Placards and posters advertising the theatres, with newspaper stories and head-lines, may be the causes of much distress to the mind of a child and bear rapid fruit of nervous tension and waste.

The prevailing school system is a hot-house for nervous tension. The objects, chiefly external, are emphasized by methods calculated to impress every pupil. The children of sensitive natures are, therefore, over-impressed. The child must be prepared by a training not to worry, not to be over-anxious, and be taught himself to substitute higher motives and ends than the rank he holds in his class. The pressure in school life causes children to bite their fingers and nails, twist their hands, and resort to many other nervous habits which can by gentle but incessant watchfulness be stopped.

The child should be taught to stand with the body erect, feet firmly planted upon the floor, arms hanging loosely and heavily at the sides, and the fingers all free; he should be taught to keep this attitude while reciting, and in every work to use only the part of the body needed for that work; everything else should be quiet. Never let a child hear of his nerves, except physiologically, as marvelous servants—messengers between the world and his brain. A pitiful thing it is to hear a little child say, "I am too nervous to read."

Systematic training of the senses tends to equalize nervous forces, and is, therefore, opposed to "nervousness." The body must be trained to be quiet, then each sense is exercised in a progressive manner, while by the whole quiet is maintained.

Motherhood

By ELEANOR ROBBINS WILSON

In "Good Housekeeping"

So short a time at my command,
These children that I hold to-night,
God give me grace to understand,
Wisdom to guide their steps aright,
That I may be throughout the land
A lamp unto their feet for light.

So short a time do small hands cling
With confidence of babyhood,
Let me not idly dream the thing,
But live the noble part I should,
That henceforth from such mothering
They shall instinctively seek good.

So short a time for my embrace,
For love, cheer, comfort, lullabies,
God help me hallow the brief space
That turns to gold each sacrifice—
So surely does a mother's grace
Build her soul's mansion in the skies.

Let Music Brighten the Lives of Your Children

Let them grow up in an atmosphere of good music.

Let their appreciation of the beautiful things of life be developed by good music.

Let them receive the indelible imprint of culture and refinement through the medium of good music.

While their young minds are open to receive such impressions, begin their musical, and higher, education with

The NEW EDISON

"The Phonograph with a Soul"

This wonderful instrument brings the world of music into your home; RE-CREATED by the world's greatest artists. No matter where you live, your children can have the same musical advantages as though living in the great cities during the height of the musical season.

The New Edison does not merely imitate. It RE-CREATES. No human ear can distinguish artist from phonograph. The famous Edison tone tests have proved this, not once, but more than 1500 times.

Write for the three books "Music's Re-Creation"— "What The Critics Say" and "Mr. Edison's Sublime Gift to Man."

THOS. A. EDISON, INC., - ORANGE, N. J.

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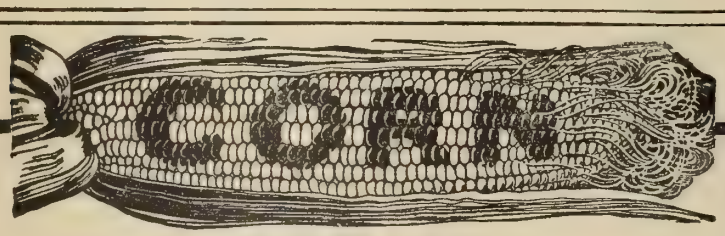

SYRUP

Are YOU saving Sugar by using

CROWN BRAND CORN SYRUP

Corn starch converted into its "sugar" form, with pure cane syrup added.

LILY WHITE CORN SYRUP

The Canada Food Board recommends Corn Syrup (White) for preserving and cooking. Also delicious for all table purposes.

In 2, 5, 10 and 20 lb. tins, at all dealers.

CANADA STARCH CO. LIMITED - - MONTREAL

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ST. MARGARET'S COLLEGE

TORONTO *A RESIDENTIAL AND DAY SCHOOL FOR GIRLS* CANADA

FULL ACADEMIC COURSE, from Preparatory to Honour Matriculation, Full Commercial Course—Music---Art---Household Science---Physical Education---Games---Swimming.

Mrs. George Dickson, President — Miss Isobel G. Brown, Principal

Miss Florence Neelands, B.A., Head of Senior House — Miss Marjory A. Ford, Head of Junior House

Resident pupils return Jan. 7, 1919. Classes resume Jan. 8 after Christmas vacation

Boys' and Girls' Sheep Club

The Third Young People's Livestock Club Has Been Organized in Peel County

FOURTEEN boys and girls in Caledon Township, Peel County, made a beginning in sheep raising when they received two pure-bred Oxford ewes each through the Caledon Sheep Club, which was organized by the Agricultural Representative. The distribution took place at Caledon on Saturday, December 21st, and was the first event of this kind in Ontario, and one that will not be soon forgotten by the young members as they proudly drove off with their much prized sheep. Both shearling and two shear ewes were in the lot and were paired off and numbered, each boy and girl drawing a number from a hat. They were allowed to pay cash if they wished or they could give a note for ten months endorsed by parent and bearing interest at six per cent. per annum. Fifty dollars each was the price paid, six members giving their note and eight paying cash. Although it was announced in the rules of the club that the ewes would be insured against death for one-half the original cost by means of an assessment, the members by unanimous vote decided to each bear his own risk of loss.

An agreement as shown below was signed by member and parent. It is intended to make the club as educational as possible and each member's name is being put on the mailing lists of the Dominion and Ontario Departments of Agriculture. In addition the boys and girls will be visited from time to time and assistance will be given if necessary in feeding and management and in marketing the wool and lambs. The ewes are at present in lamb to either imported or first class Canadian bred registered Oxford rams and next fall it is hoped to secure the service of an outstanding sire and have all the ewes brought to a central point to be bred. This will not only assure good stock but will tend to uniformity of type.

An arrangement was made whereby the financing was done by the Sterling Bank at Orangeville, and the manager was present when the sheep were given out to take care of the payments. The Bank took a keen interest in the Club and assisted with the advertising, etc. We have found all the banks eager to help with this work and there is no reason why farmers' clubs and other agricultural organizations should not make fuller use of bank loans for purchasing better stock and farm supplies of various kinds.

AGREEMENT

I HEREBY AGREE TO:

1. Feed and care for my sheep to the best of my knowledge and ability, to study the bulletins and instructions of the Department of Agriculture and to follow them as closely as possible, and to do personally as far as I am able all the work required in the care and management of the sheep.

2. Submit to the Agricultural Representative for Peel not later than October 31, 1919, a statement including amount of wool sold, grade and price per pound; kinds of feed used; increase in the flock, how disposed of and price if sold and give any further particulars of interest.

3. Use for the first two years at least only a pure-bred registered Oxford sire that shall be approved by the Agricultural Representative, and if he deems it advisable I shall bring the ewes to some central point to be named by him in order to secure the service of the best sire obtainable.

. . . . . .

Signature of Member.

I HEREBY AGREE TO:

1. Provide suitable feed, buildings and surroundings to insure the health of the sheep and to advise in their care and management, to encourage member in every possible way and to see that the agreement signed above is fully carried out.

2. Allow member to do all the business in connection with the sheep and to permit member to retain complete ownership of sheep and their progeny and receipts from sale of same.

Caledon, December 21, 1918.

. . . . . .

Signature of Parent

TURNING THE TIDE TO COUNTRY LIFE

Continued from page 13

suries. Many others believe that before rural education can reach any high standard throughout Canada, especially in the East, it will have to have financial assistance from the federal treasury. There is not much hope for raising much more than is already raised, as long as all the taxing authority remains in the hands of small units.

Perhaps the country gets on an average all it pays for. It is as true in education as in business that one gets as a rule only what one pays for; one does not get something for nothing. Some school districts have good teachers and send their children more regularly to school, consequently their schools pay relatively good returns for all invested in them. Undoubtedly as one frequently hears stated some teachers receive more than they are worth, but just as surely no really good teacher ever receives *more* than he or she is worth. When one considers that in Denmark, mentioned previously as having a good system of rural education, a country schoolmaster received a pre-war equivalent of from $1,500 to $1,800 in American money besides a liberal pension for old age, it may be seen how niggardly our financial support of rural education is in Canada. A people can only be as great as its schools are good. When shall we learn our lesson?

These observations and criticisms have been made, it must be understood, in general terms. There will be necessarily exceptions to some or to all of them in many parts of the Dominion. There will be some country communities that do have a proper vision of the great service that education may yield rural citizenship. There are schools that do give an adequate training. In many districts they have been progressive. In recent years many have begun to teach more naturally in terms of the child's environment. Attempts have been made, too, to supplement the elementary school courses with suitable instruction of secondary school grade. Many schools, too, retain well paid and proficient teachers from year to year and stint nothing necessary to give their children the very best educational opportunities.

But when all the best has been said for all the worthy things that have been or are being done, it still must be said that Canada at large has in Education for Country Life its greatest educational deficiency, its greatest need and its greatest opportunity.

Changing Goldsmith's "peasantry" to "yeomanry" for a proper Canadian application let us remember:—

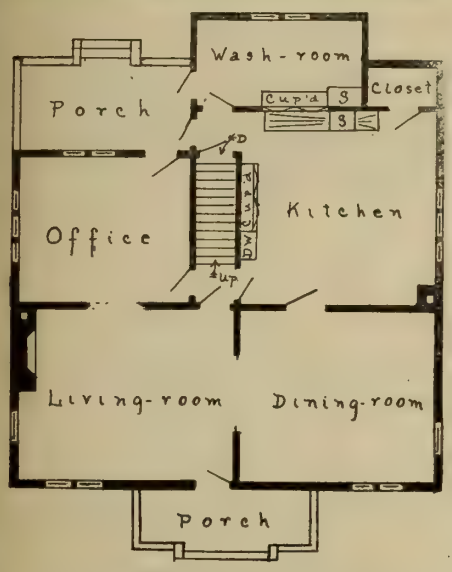
"Ill fares the land, to hastening ills a prey,
Where wealth accumulates, and men decay;
Princes and lords may flourish, or may fade;
A breath can make them as a breath has made;
But a bold *yeomanry*, their country's pride,
When once destroyed can never be supplied."

In the next article it is proposed to show how through lack of leadership and our failure to develop a faith in education and a consciousness of its worth, rural education throughout Canada has come to be as it is.

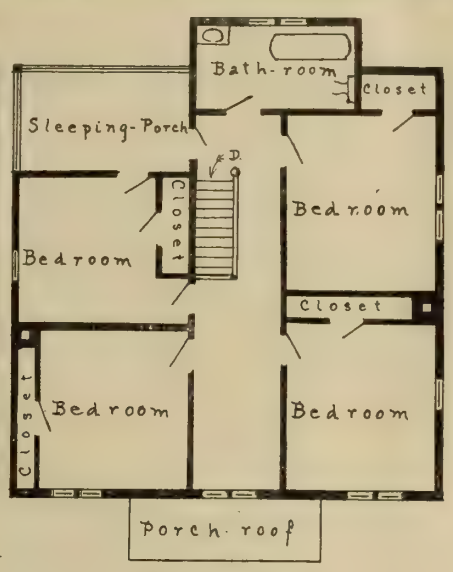
FARM BUILDINGS

A Livable Farm House

By GENEVIEVE



Ground Floor Plan



Upstairs Plan

THE home-builder who wants something artistic and livable at moderate cost, will be interested in this house. While the type is shown here in a frame house it looks equally well in brick or stucco, and though it is not large the exterior gives a sense of pleasing restfulness, while there is a rather surprising amount of room inside.

The front door opens directly into the living-room, giving to this room the space that would otherwise have to go into a hall. By giving the stairway a place in the centre of the house and having it go up from a little square hall it can be reached directly from the living-room, office or kitchen and a back stairs is unnecessary. Between the dining-room and living-room, and the office and living-room, there are sliding doors which can be opened wide, practically throwing the three rooms into one. This arrangement is especially good in a small house as it gives an effect of spaciousness. At the same time it is usually a mistake to leave a dining-room or an office with an open archway; there are times when it will be desirable to have these rooms closed for the sake of convenience or privacy.

The working part of the house is planned with a special view to the convenience of the housekeeper. There is a washroom for the men which can also be used as a laundry and to relieve the kitchen of other dirtier work. This arrangement is better than having a laundry in the basement as the wet clothes don't have to be carried upstairs. With a pulley clothesline the clothes can be hung out without taking more than a step out of doors. The position of the sinks in the kitchen and washroom gives a very simple arrangement of plumbing. Off the corner of the kitchen there is a closet for brooms, mops, etc., while the cupboard for dishes beside the sink and the supply-cupboard or kitchen cabinet, and dumb-waiter, all help to save steps for the housekeeper. The porch, with doors to the washroom, kitchen and office makes a pleasant and convenient outdoor rest-room at any hour of the day.

In planning the layout of the rooms upstairs, it might be better in a small house of this type to have only two dormers or to widen the division between the two halves of the middle dormer and run the partition between the two front bedrooms back from this, doing away with the hall here and having more space for the bedrooms. The layout shown in the diagram explains itself. It will be noticed that the partition walls on this floor are almost all placed directly above those on the floor below, an important provision for the carrying of heat to the rooms upstairs. Having the bathroom directly above the washroom, in the same way simplifies the plumbing system. The sleeping porch like the fireplace, the cheerful window arrangement and the "grouping" of the rooms downstairs adds to the comfort and general livableness of the place.

HIRST'S Pain Exterminator

Works Quickly

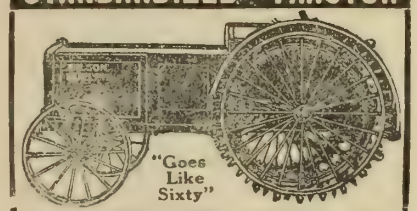
HAVE A BOTTLE READY WHEN NEEDED—*and stop the Pain!*

When you have an attack of rheumatism, lumbago, neuralgia, or get a lame back, swollen joints, or a sprain—you don't need to suffer. Get the bottle of Hirst's Pain Exterminator and use it according to directions in circular. It stops the pain quickly. Buy a bottle and be ready. Equally effective for relieving earache, toothache, sore throat and other painful ailments. For 40 years it has been a family friend. **At all dealers—or write us**

Hirst Remedy Company
Hamilton, Canada

Also makers of HIRST'S Family Salve and HIRST'S Pectoral Syrup of Horehound and Elecampan: for coughs and colds.

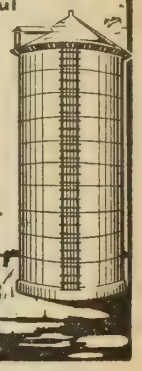
GILSON STANDARDIZED TRACTOR



Great power, strong, durable, compact construction, light and handy. Wonderful draw bar pull, unsurpassed for belt work. Standardized throughout. A serviceable one-man Tractor that will make money for you 10-20, 12-25 and 15-30 h.p. Made in Canada. Write to-day for catalogue.
GILSON MFG. CO. LTD., 67
674 York St., - Guelph, Ont.

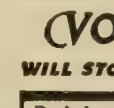
HYLO SILO

Sweet Fresh Ensilage down to the last forkful



THE HYLO SILO is perfectly air-tight. No frozen or spoiled ensilage around the walls. Convenient and perfect fitting doors, adjustable without hammer or wrench. **Made of Guaranteed Long Leaf Yellow Pine. Built to last a life-time.** Stands rigid when empty.
Write for prices and catalogue.
AGENTS WANTED.
Gilson Mfg. Co. Ltd. 415 York St. (4) Guelph

VOLPEEK
WILL STOP THE LEAK



Don't throw away your Pots and Pans. "Vol-Peek" will mend Graniteware, Tin, Aluminum, etc., in two minutes without tools. Always keep it in the house. At dealers or from us, postpaid, 15 cents.
Vol-Peek Mfg. Co., Box 2024, Montreal, Can.

BRIGHT, intelligent farmer in each township, must be well acquainted and have horse and cutter. Can earn good money without risking anything but time.

Write for full particulars. Good prospect for a live man.

Sales Dept., 682 Bathurst Street
TORONTO

THE KEYSTONE DEHORNER. The Department of Agriculture has found by actual experience that dehorning cows adds to their milking value. The **KEYSTONE DEHORNER** is mentioned in the 1913 report (page 131) as a most effective instrument for the purpose. Write for booklet.
R. H. McKENNA, 219 Robert St., Toronto.

WE BUY OLD FALSE TEETH

Don't matter if broken. We pay up to $35 per set, also actual value for OLD GOLD, SILVER, PLATINUM AND DENTAL GOLD. We send cash by return mail and hold goods for 15 days for sender's approval of our price. Mail to
Mazer's Tooth Specialties
Dept. 128 2007 So. 5th Street, Philadelphia, Pa., U.S.A.

Why waste your strength on a washboard? to do the ever-present family washing.

when you can get maximum results with the least effort by using the Connor Ball Bearing Washing Machine, and reserve your strength and ability for more pleasing and more profitable occupation.

The **CONNOR** Ball-Bearing **WASHER** not only saves your time, it saves the clothes from the harsh wash-board atment. Gives much better results with lighter work than when done in the old-fashioned way. Send for your booklet on this machine by first mail.
J. H. CONNOR & SON, LIMITED
Established in 1881 OTTAWA, ONT.

Complete Fertilizer

ANALYSIS

2 Ammonia	6 Phoc Acid
2 Potash	30 Lime

Write for price
GEORGE STEVENS, Peterborough, Ontario

MILTON BRICK

are in constant demand. Our plant has run continuously during the full period of the war with a ready sale for the entire output.

This during a long period of building depression is a good testimony to the quality of Milton Brick.

They are well made, look good and prices are reasonable. Write us for samples and get your order in so as to take advantage of any sleighing.

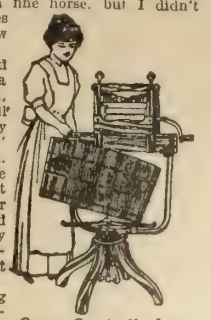
MILTON PRESSED BRICK CO., LIMITED
Head Office: Milton, Ont. Toronto Office: 48 Adelaide St. W.

THIS WASHER MUST PAY FOR ITSELF

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.



Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to buy the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washer-woman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50c. a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Please state whether you prefer a washer to operate by hand, engine, water or electric motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Better address me personally, P.H Morris, "1900" Washer Company, 357 Yonge Street, TORONTO.

Make and Sell SOCKS

SEAMLESS HOSIERY, ETC.

There's big money in

RED-CROSS-SOCKS

MILITARY SOCKS, ETC.

on our

KNITTING MACHINES

Help the boys who won the war. Help yourself and we will help you in MONEY-MAKING.

CATALOGUE FREE

CREELMAN BROS., M'fgr's

Box 677 Georgetown, Ont.

RURAL MAIL

BOXES, LIMITED

A. R. L., Ontario.—Would you advise investing money in Boxes Limited of Ottawa?

Answer.—The company has an authorized capital of $250,000, but no definite information is available as to the amount subscribed or paid-up. The plant is described as well equipped and has been reported to be worth in the neighborhood of $25,000, net. The company was organized under its present title in March last, being the outgrowth or the Canada Cheese Box, Ltd., which became incorporated with an authorized capital of $90,000 about three years before and acquired the right for the manufacture of a patented cheese box of waterproof pulp invented by Byron Moses, who is secretary-treasurer and manager of the present concern. It was reported that for the first year of business the company showed a loss of $5,000 including organization and other expenses, which were probably responsible for the fact that a much better showing was not made. At first the concern manufactured cheese and produce boxes and oil can jackets, but later added a number of other lines. Since the reorganization fair sized orders have been received not only from the cheese manufacturers but other consumers throughout the Dominion of Canada as well as the United States Government. Some twenty helpers have been employed and the plant has been kept busy. We understand that further expansion is planned if the requisite capital can be secured.

WATERWORKS

A. S., Ontario.—Could you send me a diagram showing the best method of putting waterworks in the stable? The well is close beside the barn. Also send plan of the best system of waterworks for a house. The house is two stories high and has a well right beside it, with a hand pump. The barn has a windmill to pump in the water. We would want a supply tank in the stable.

Answer.—First regarding the stable. Some use a galvanized tank set on blocks in the stable, the top coming about on a level with the barn floor. Others set the tank on the barn floor, with side centre where it can be protected by straw or hay covering all winter. Others use a wooden stave tank, setting it up 4 feet from basement floor and extending up to barn floor at the south side underneath granary or near the alley way between horses and cattle. The position of the tank must be determined by reference to individual cases. The eave pipes then run to this tank or the pump supply pipe enters it from the inside. You can then pipe the water from this tank to your stalls by inch pipes as you want them arranged. Water bowls can be bought and attached with little trouble.

Regarding the house, the best way out of this is by the use of a pressure tank in the basement. This is supplied by several firms and has a gasoline engine attached which pumps the water from the well into the tank, which forces the water through the house. The sewage is taken care of by means of a septic tank which is quite easily installed. From personal knowledge, this system gives eminent satisfaction. We will be glad to have a diagram made of the barn system and published in an early issue.

BEANS HARD TO SELL

Mrs. W. McI., Ontario.—Could you tell me if there is a price set for beans in Ontario yet? And also if you know of any firms buying beans by the quantity, as I have 200 bushels to dispose of?

Answer.—There is no set price on beans. We have had several inquiries about the sale of beans. The fact is the market at present is dead as far as active demand goes. It is not likely that there will be any renewed activity until February. Prices to farmers now have been from $3.50 to $4.25, and dealers are not anxious to buy. Perhaps this is only natural as many dealers were loaded up with beans in 1918, going to a lot of trouble to dry the crop on the tacit assurance by the Food Board that a market would be found for them. This was not done and many dealers lost heavily, especially since Japanese beans came in duty free, selling at $4 Toronto. Our Canadian beans generally go to canners and to the Maritime Provinces, but owing to the high price, these people buy potatoes instead.

PIPES FILL IN WATER-SYSTEM

Mrs. G. S. Ontario.—I have a water-system in my home. This system is supplied by a tank, fed by a windmill.

The pipes are quite small, and, owing to low pressure, have nearly filled up.

How could they be opened? I have spoken to the plumber who did the work. He said perhaps a blower could be used to advantage, but he didn't know.

Answer.—Send us a plan of your piping and kind of pipe used, whether, black iron or galvanized. It may be cheaper and much more satisfactory to put in a new lot of larger pipes.

HARD TO WEAN COLT

R. M., Alberta.—I have a mare which is an unusually good milker and wanting to wean her colt. I am finding it quite difficult to dry her up. Am feeding her on dry feed only and no grain at all. She runs out in the day time.

Answer.—Johnstone in his horse book, says it is best to wean the foal at once and cut down the grain ration and milk some of the milk from her 3 or 4 times thh first day, and so on gradually till the flow ceases. Work the mare right along. It will be best to keep her in the stable for a while.

THE UNITED FARM WOMEN OF ONTARIO

Continued from page 18

and the children all drank from that cup. There were other conditions that made me want to gather my children up and take them away from such surroundings. The Women's Institute asked the trustees to put in a covered tank, but the men thought it would cost too much. We were three years before we got it. If we had had a woman on the school board we could have fought the thing through at once. The members were unanimously in favor of having women on school boards and protested strongly against the law which prohibits any woman from being a member of a school board unless she holds property in her own name in the municipality.

Another school problem came up. A speaker said: "In our school the teacher leaves the school at noon. The germ-laden drinking pail is nothing compared to the harm which may be done to a child's character in that hour. Mothers learned about things that went on and the trustees were informed, but they just considered it gossip—another instance of the need of having women on the school board."

"The sad thing about this," one woman remarked, "is that the mother, who should explain things to her children, leaves them to get it from some vulgar source. There's a right and a wrong that a mother should teach him first. We could at least have a Mothers' Meeting in the afternoon and talk these things over. Make it an experience or fellowship meeting, and get everyone together. It would at least help to get rid of a lot of narrow-mindedness, and would give us more confidence in each other. This standing aloof, this slowness to co-operate is one of the greatest hindrances we have to progress."

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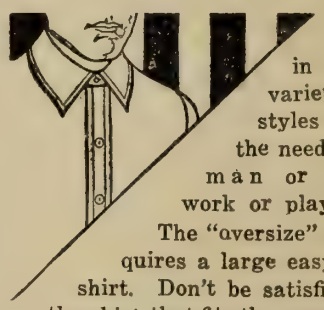

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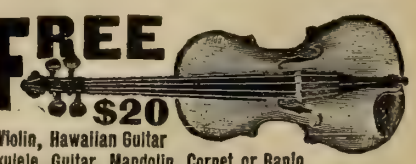

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FUR FARMING

Trapping *in* Winter Snows

By ROBERT G. HODGSON

WITH the coming of the cold, snowy winter months many trappers go temporarily out of business and await the coming of spring to resume their fur collecting activities. There are many reasons why the trapper should keep busy during the winter months, but chief among them is the fact of the full primeness and full furred pelts. As spring comes, the weasel, mink, raccoon, fox, etc., lose their primeness and, the running season being at that time, the animals are always in an antagonistic mood and will fight whenever they meet. This causes the skins to be badly cut and the fur rubbed. This all means decreased prices. And again furs are always in a heavy demand with high prices during the winter months, and this demand gradually goes down as spring approaches.

During the winter months such animals as the skunk and raccoon den up and come out very little; if at all it will be only on mild, cloudy nights such as during a thaw. An excellent way to go after them at this season of the year is with a smoker. You may remember that in former articles of mine I was never a strong advocate of this and similar methods for securing fur bearers, but knowing they are used anyway, and as there is practically no other method for taking these animals during the winter months, I will give what information I can on the use of same. The main idea is not to destroy the skunks' dens (or those of any other animal for that matter) as they never build a den of their own and will move to some new neighborhood when their old one is destroyed.

There are several smokers on the market and all seemingly answer well for the purpose required, viz.: to drive the animal from the den. It is immaterial which you use as I believe they are all good. You will find it to advantage, in using same, to fasten a few feet of rubber hose on the end of smoke nozzle and then run the tube down hole as far as possible. In this way it gives the smoker far greater carrying power. It is not necessary to buy the so-called smoke powder to use in same as you can easily and cheaply make your own. This powder is made from equal parts of sulphur and charcoal pounded fine and well mixed. The charcoal holds the flame while the sulphur gives off the fumes. Put this powder on a rag, as you would the bought stuff, light it and placing in the smoke chamber go to it. The deep snows often cause considerable difficulty in winter trapping and sometimes you find your traps are buried up, so that it is impossible for an animal to get caught. At another time, when the wind is high and the snow dry, as is often the case, the trap will be blown bare in plain sight of cunning animals. In the northern districts of Ontario, or in any part of Canada for that matter, there are very heavy snowfalls and it is necessary for the trapper to build shelters or "houses" for each trap. It would not require much more work to build a deadall than it does a shelter for the trap, and the deadfall would have the added advantage that it would not need to be covered over. The snare and deadfall once so much used are now seldom seen, at least this is the case in the rural communities of Canada. They are, however, used a great deal in Northern Canada. Most trappers will tell you they do not use these methods, that of the deadfall in particular, on account of the work required; but the snare and deadfall are invaluable in the north where the snows are deep.

Both of these primitive means of trapping are very well known. It is unnecessary to describe the deadfall, as every free trappers' guide prominently displays the drawing of the common deadfall. The snare is either a wire or strong cord, depending on the animal for which it was made. Brass or copper wire is used and it is better to have several fine strands, twisted closely together, rather than one large strand. These two metals—brass and copper—have an odor readily detected by an animal such as the fox, whose scent is very sharp, and this odor can be gotten rid of, and the brightness of the metal taken off, by boiling the snares in a solution made by boiling the inner and outer bark of the hemlock tree for an hour or so.

Then again the deadfall and snare have the advantage that they are very inexpensive and in the case of the latter several dozen of them would not weigh as much as one fox trap. Where you have snares and deadfalls set you will not be using steel traps, and your traps can be set at other likely places to advantage.

In the case of trapping cunning animals such as the fox you will find that deadfalls, being made of wood, appear natural to them and do not arouse their suspicions and though the wood is new it soon takes an appearance of age. As there is nothing to get out of order it can be used with success season after season. Speaking of foxes, as they are very active during the winter months, one of the best methods to secure them is to go after them with some hounds and a gun.

So, even if the snows are deep, set out a string of snares and deadfalls for the wary fur bearers and use plenty of bait—natural and also some grade decay. During the winter food is more scarce than at any other time of the year and the animals take to it better.

The Black Fox Industry

The Silver Fox Breeders' Association of Prince Edward Island was incorporated in 1915 and has since carried on the work of classifying, registering, and marking the silver black foxes within the province, thus giving to fox breeding the same status as pure bred livestock. The result has been most gratifying, a much larger proportion of these silver foxes than of any other livestock being already duly registered. A purchaser can now readily obtain breeding foxes with such authenticated pedigree and record as will afford a practical guarantee that their offspring will prove true to type.

The solid and stable character of the industry is attested by the manner in which the fox companies have during the past few years stood the stress and strain of war conditions, closed markets and diminished values. Nearly all the 300 companies are carrying on their business at the old stand and increasing their production from year to year. While temporarily suspending the payments of dividends, they have increased the numbers of their breeding stock and added largely to their productive capacity.

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DAIRYING

Mineral Nutrients *for* Cows

By WILLIAM WOOD

THE most important factor in maintaining the health and breeding qualities of the dairy cow is the extent of the knowledge of the man who is feeding her concerning the requirements for heavy milk yields. Milk contains a high percentage of mineral nutrients from which bones and teeth are formed. This means that the ration for the cow must contain these nutrients in abundance if she is to produce profitably and keep healthy and vigorous.

Since the development of the dairy cow to her present high production many feeds in which the mineral nutrients are deficient have come into common use on our farms. So long as these feeds were fed along with wheat bran, legume hay and other feedingstuffs containing plenty of the mineral nutrients, but little harm resulted from their use, but when inferior grain and roughage feeds were fed along with them a dropping off in milk production and flesh condition was readily noticeable. Experiments show that in most dairy rations there is a deficiency of the important mineral elements and that even with legume hay such as alfalfa or clover some of the more important mineral nutrients may be fed to advantage to the dairy cow.

Alfalfa, clover and most of our home grown grain feeds contain an abundance of these mineral nutrients, but not so with some of the purchased "feeds of commerce" in which the proportion of nutritive constituents has been disturbed in the process of manufacture and manipulation. We have long realized that mineral nutrients in the ration of the dairy cow should be given more attention. Dairy heifers should be developed upon such feeds as alfalfa and clover hay, wheat bran and ground oats because of the richness of these feeds in the mineral nutrients necessary to build up a strong body and be able to produce a vigorous calf. Weak calves and weak mothers have been produced by feeding rations low in mineral nutrients especially when the roughage feeds consisted of wheat or oat straw. It has been pretty thoroughly demonstrated that when wheat and oat straw are the principal roughage feeds that finely ground bone meal will improve the condition of the animals and insure stronger and more vigorous calves.

Some Feed Bone Meal

I have discussed this problem with several breeders of pure-bred dairy cattle who claim to have had wonderful success in feeding bone meal to the cows and heifers once a day. Lime and phosphorus are the two mineral elements most used in the production of bone. Potash is of especial value in the making of new tissues, both bone and flesh. In order to produce the full development of bone in the calf and at the same time maintain the cow in a good condition of health the feeding must be correct before the calf is born. By feeding these mineral nutrients in the ration of the cow during the time she is pregnant the calf will develop a strong frame and vigorous constitution. As the development of bone to the full extent carries with it an increase in size and vigor of all the vital organs and a large increase in the proportion of lean meat in the carcass it can easily be seen that we cannot afford to supply our cows and heifers with feeds that are deficient in these mineral nutrients.

Some Prefer Charcoal

Some dairy authorities recommend feeding raw rock phosphate and ground limestone to dairy cattle, but as a rule better results will be secured by giving feeds like charcoal, bone meal and the like. Such feeds are of vegetable origin and therefore are more reliable carriers of these nutrients. Many dairy farmers have practically eliminated abortion from their herds by feeding an abundance of good legume hay and a light feed, perhaps a tablespoonful of bone meal, twice a day. Animals that are properly nourished are less likely to abort and especially is this true of cows producing heavy flows of milk. The importance of mineral nutrients in the ration of the heavy milk producer is well established and the time is coming when we will devote more attention to balancing up the mineral nutrients as well as protein, carbohydrates and fats in our feeding materials.

DAIRY FACTS THAT COUNT

By W. H. UNDERWOOD

MANY people believe that sour cream tests higher than sweet cream, but this belief is erroneous. Sour cream contains no more butterfat than sweet cream. Cream should always be delivered to the creamery or cream buyer in a sweet condition. Some think good cream must be very thick and test very high. This is another erroneous belief. Quality in cream is not denoted by test. Quality is determined by age, acidity and flavor.

The period of gestation in cows is approximately 285 days. Under normal conditions a cow comes in heat every 24 days. Heifers will breed at nine months of age, but they should never be bred while so young. They should be at least 15 months old before being bred. A cow well fed and well cared for will raise calves and yield goodly quantities of milk for 20 years. She is in her prime when from four to eight years old.

How much does a gallon of milk or cream weigh? "A pint's a pound the world around" applies only to water. Whole milk of average richness weighs 8.6 pounds to the gallon. Cream varies from 7 to 8 pounds and buttermilk usually weighs about 9.2 pounds to the gallon. Average richness means milk that tests 3½ per cent. butterfat. A hundred pounds of 3½ per cent. milk will contain 3.5 pounds of butterfat, but will churn about five pounds of butterfat owing to the salt and water in it. Milk of this same average richness is composed of 87.5 per cent. water, 3.5 per cent. butterfat, 3.8 per cent. casein, 4.5 per cent. sugar and .7 per cent. minerals such as lime, phosphorus, etc.

An unsuspected cause of bad flavor in butter is sometimes the use of metallic substances about the churn where they come in contact with the cream or butter, using rusty cream cans or putting the butter itself where some metal touches a portion of it. Not only does such metallic contact produce a bad flavor in the butter but it causes the product to spoil much more quickly than it otherwise would. Even an unprotected iron bolt head in the churn may be the cause of a bad flavor in the butter. It is well to look over the dairy implements carefully and see if anything is being used which could affect the butter or cream.

Examine the Teeth

In buying a cow the teeth should not escape examination if an intelligent purchase is to be made. If the teeth are poor or lacking this is evidence that age has made perfect mastication impossible. The cow that is to eat well and last well must have sound teeth. The incisor teeth of cattle are directed upward, shovel shaped and loose in their sockets. Many a beginner in dairying has been "fooled" by this natural condition into imagining all sorts of trouble as the cause. The teeth are loose and

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projecting that they may not lacerate the hard palate of the upper jaw serves the purpose of an upper set of incisors. If the cow is quite old the broad part of the incisor teeth will be found much worn or wholly worn off so that mere rounded stubs of the necks of the teeth remain. A cow in that condition is rarely a profitable investment as a dairy animal unless she is a pure-bred and famous as a producer of fine calves. The latter may be raised by hand or "mothered" on another cow, but the toothless old cow will not be likely to live long or produce a large flow of milk with profitable persistence.

Why Strip Clean?

What is the reason for clean stripping being of so much importance in the process of milking? The udder of a cow, which is composed of a solid mass of granular substance separated into cells or divisions, is divided into two parts by a membrane from the front to the back, making two distinct halves. These halves are not divided and yet the front and back parts are distinct from each other, each quarter being connected with the teat which belongs to it by the small cells or divisions. The upper part of the udder is made up wholly of fat while the lower part has very little fat. Consequently with this structure the udder is not a simple reservoir of milk as some people believe. The udder in fact can hold very little milk; the combined spaces or ducts in it are found to be insufficient to hold half a pint of milk in a cow giving several quarts at a milking. The milk therefore is produced in the udder as the milking proceeds and the cow may prevent the flow of milk by repressing this action.

The giving of the milk is a voluntary act of the cow and as she lets it down the milk flows from the cells of the udder into the passages leading into the teats. Necessarily the milk can only come from the upper part of the udder and the granular fatty substance in this part of the udder is mingled with the serum or milky fluid that escapes from the glands by a change of the substance into milk. Thus the richness of the strippings is accounted for and the necessity demonstrated for every possible drop of milk being obtained at every milking because the failure to milk the cow thoroughly not only results in a loss of the richest part of the milk but also acts injuriously against the cow in subsequent milkings.

REASONS FOR BAD MILK

By Wm. Wood

ONE of the "milk faults" which is very common during the winter months is bitterness in the product. This trouble may be due to either of two sources. If a sample of milk is drawn under perfectly clean conditions, and is bitter when it comes from the udder, the trouble is due to the cow not being in a good state of health or to the feed she is eating. I would change the ration wholly or in part at least and then after a few days if the milk continues to have a bitter taste I would have the cow or cows well examined by a competent veterinarian. Sometimes the milk becomes bitter as the cow nears the end of the lactation period, in which case the bitterness will disappear after the cow freshens.

In the majority of cases, however, the milk becomes bitter after it is drawn from the cow. In this case the bitterness is due to the growth of a certain kind of bacteria which can grow at considerably lower temperatures than the ordinary sour milk forms. Thus in the winter time, when the milk is kept near the freezing point, these bitter forming species are able to develop more rapidly than the ordinary species which produce souring in milk.

The bacteria which cause bitterness in milk get into the liquid through the use of unclean utensils or from pieces of dirt or manure from the barn or cow. Thorough washing and scalding of the cream separator, strainers and all the utensils used in the handling of the milk, cleaning the dirt from the sides and flanks of the cows before beginning to milk, using a covered milk pail where hand milking is practised,

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contents are carefully censored—no sex stories—you can take it into your home with the utmost confidence.

A word about the contents—

"Why Laurier Will Wait"

In discussing the policy of the Liberal leader during the coming session of Parliament, J. K. Munro predicts, in January MACLEAN'S, that Laurier will allow Union Government a free hand. In this policy of inactivity "he sees the way open to the accomplishment of all his purposes. If he is half the politician his friends believe he is, he will sit and smile and wait—yet a little longer."

All Canada is interested in what is going to happen in Ottawa. J. K. Munro, veteran press gallery man, is a shrewd observer, and his political articles in MACLEAN'S have stirred up more comment than anything else appearing in the press of the country. He knows politics from the inside. "Why Laurier will Wait" is a forecast of the near future that bristles with interesting points.

A few of the other "head-liners" in this issue:

Bolsheviks at Work in Canada

A sensational article on activities in subterranean circles. There are foreigners in Canada ready to wave the red flag.

Achievements of the Canadian Army

Since the Canadian Division was formed, they have not retired a foot nor lost a gun—a marvellous record. An inside story of how this great army was handled and controlled is told by H. F. Gadsby who spent a month at Headquarters during the last great offensive.

The Grave Dangers of Peace

An article by Agnes C. Laut on the insidious new propaganda being launched by the Germans to split the Allies.

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and in fact being just as clean as possible in drawing the milk from the udder and in handling it afterwards are the only means to employ in preventing the milk to become bitter by bacteria.

Unless the bitter flavor is very pronounced it usually disappears when the cream is made into butter or cheese. If cream which has a tendency toward the bitter flavor is to be used for making butter the trouble may be prevented by putting it in a warm place, adding sour milk as a starter and allowing the batch to sour before the bacteria which cause the bitterness have a chance to start.

Other "milk faults" which are liable to appear at any season of the year are those fermentations which cause a change in the color of the milk. Many of us can cite instances when all the milk produced for a time took on a certain color and then the cause seemed to disappear as quickly as it came. These changes are in most cases due to abnormal bacterial action and may be any one of a variety of colors as blue, red, yellow, black or green.

Bluishness of the milk is one of the most common of these abnormalities. At one time it was believed that this color was due to the condition of the milk casein, but more recent investigations show it to be caused by a particular type of bacteria. In order for this germ to develop the milk must be acid, so we do not find it in fresh milk or in milk that has not become sour. At first blue spots appear throughout the product and these spread until the whole is of a bluish color. That an acid condition of the milk is necessary for the development of this undesirable feature accounts somewhat for the fact that blue milk is more common during the summer months than in the winter time. The germ producing the blue color is destroyed at pasteurizing temperature.

Red or bloody milk is possibly more common and may be caused from an abnormal condition of the udder as well as through bacterial action. An inflamed udder may produce bloody milk of a reddish-yellow or clay-colored appearance. On standing, small blood globules settle to the bottom of the container if the color of the milk is due to inflammation of the udder. If it is due to bacterial action the red globules appear at the surface much the same as did those for blue milk. Sometimes colostrum may be mistaken for bloody milk, but in this case a reddish cream appears at the top of the milk upon standing and no blood particles separate out.

Certain minute organisms act on the butterfat in milk and produce different shades of yellow from a brilliant to an amber. These mostly act by curdling the casein, then breaking it down and dissolving it. Other colors are also produced by bacteria with a deleterious effect on the value of the milk in its true form. Some of them, however, have beneficial effects in butter and cheese manufacture and it is a question as to whether they are not of more value than harm. When they appear in whole milk it is not a cause for great alarm but simply a warning to thoroughly clean and keep clean all the utensils and clean up anything which might harbor the germs which produce the fermentation.

BUTTER AND BUTTERFAT

By W. H. Underwood

EVERY dairyman ought to have a complete and clear understanding of the difference between butter and butterfat. It is the absence of this that accounts for many a misunderstanding between cream buyers and cream sellers. Many a creameryman has found himself "stumped" when he has attempted to explain to a patron why more pounds of butter can be made from a certain quantity of cream delivered to the creamery than the pounds of butterfat that the producer is paid for.

"Backsliding" or "backslidden" patrons very often uncourteously tell the creameryman that he is not giving honest tests as more butter has been made at the farmer's or dairyman's home than was paid for the butterfat at the creamery from an equal quantity of cream. The producer of the cream is right when he says he can make more butter from a given quantity of cream than the number of pounds of butterfat he would be paid for at the creamery from the same amount of cream. He is mistaken, however, when he considers the creameryman has been dishonest with him, because it is an inevitable fact that the butter should exceed the butterfat.

Butterfat as shown by the Babcock test is practically a pure oil. There may be and probably is a small quantity of water or acid in the fat column in the neck of the test bottle, but we will suppose it is a pure oil as the impurities have no material influence on the final result of the Babcock test. The butterfat is a complex oil made up of nine different fats, each having its own particular melting point. When, however, they are physically united the alloyed fats have a common melting point.

When the butterfat is in milk or cream it is in the form of minute globules, it being emulsified throughout the mass. It is then in very close physical relationship with the other components of the milk product and without adding a sufficient amount of acid to destroy all the solids in milk, not fat, it would be practically impossible to get it free from the other milk components. When cream is churned there still remains this close relationship between the butterfat and some of the other milk components. While the butterfat becomes more united and in a solid form during the churning process it takes up or becomes more or less closely united physically with water and curd or casein which were in the cream. Besides these substances there is incorporated in most butter enough salt to give it the desired flavor.

Butter then is composed of butterfat, water, salt and curd. Hence more butter can be made from a given quantity of butterfat than the amount of original butterfat. In creamery practice an attempt is made to get about one-fifth more butter than butterfat. For instance if 100 pounds of butterfat were in a churning an effort would be made to get about 120 pounds of butter. This increase of butter over butterfat is known as "overrun." This is one of the factors that makes it possible for the creameryman to pay more for a pound of butterfat than the producer of the cream can get for a pound of butter made on the farm.

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The belief that cheese is indigestible is in most cases just a notion. Chew your cheese well and you will digest it easily. And you needn't have any prejudice against the odor thereof, either. Some of our best American-made cheeses are exceedingly mild in this respect.

MUSKOKA RANCHES

By W. T. N.

There are thousands of good acres of ranching land in Muskoka. About 4 years ago, I bought 600 acres half a mile from my home farm and had it fenced in. In May I put my one-year-old and 2-year-old steers and heifers and late cows on it. By the end of October the 2-year-olds were ready for the butcher. During the past two years they have brought me from $90 to $100 each. Last May I put out a cow which had gone wrong in her udder, to raise her own calf and she came in in the fall fat as butter and I sold her for $90.

I raise winter feed on the home farm, about 250 acres. My small ranch will summer-feed 20 head more than I can raise, but I cannot buy the right type here.

One County's Community Work

Continued from page 18

them off to the provincial livestock show to compete with boys from other counties. This is the first time the girls have been given the same chance as their brothers. On the day of the county fair the Department of Agriculture's tent was the most popular place on the grounds. Twenty girls from the five canning teams were there in white uniform, the initial letter of their team enbroidered in the team's color on their caps—as attractive and as typical of the wholesome, unspoiled, ideal Canadian girlhood as the most fastidious critic could desire. And *can!* It was the quickest, deftest, most graceful performance I have seen for some time. And when they stood behind their exhibits to answer any questions the visitors might ask, they may have lacked the glib assurance of the professional demonstrator, but there was no doubt that they knew what they were talking about and they told you simply and directly—which is just as we would rather have it.

This was only the beginning of special work with the girls. The regular winter short course in Domestic Science, Sewing or Home Nursing for girls, given in conjunction with the boys' course in agriculture, is being extended to take in lessons in mothercraft; house planning, decoration and furnishing; food values and cooking; home nursing; sewing, laundry and general household administration—with special lectures in other technical lines *and in social and community work.* The idea is to give the girl a broader vision of, and some insight into all the possibilities of her home and community life. A physical culture course has been arranged for another girls' club.

ANOTHER interesting piece of Miss McIntosh's work has been introducing the teaching of domestic science, sewing and house-planning in the county schools. As a result of this, two schools have already been started with coal oil stoves for preparing something hot for the children's lunches. The way these stoves came is typical of the Representative's individual methods in other departments. The school fair prize list for the county, which usually contains some surprises, this year opened a contest for "the best group of three or more babies between the ages of six and eighteen months from one school section—the following points to be considered by the judges: Healthful appearance, proper clothing, good looks and standard weight and measurement." The first prize was a coal oil stove for the school. Whether it was pride in their children or an interest in having the stove in the school that made the parents enter this contest so enthusiastically would be difficult to say. Anyway the school lunch problem, that has been for years a subject of discussion at so many farm women's meetings, has been solved in two sections at least.

The welfare of the children seems to be the main objective in most of this county's community work. Last summer all the women's organizations of the county town were called to a meeting in the Agricultural office to discuss the matter of having a "Baby Week" in town, and they all went out from the meeting enthusiastic and with something very definite to do. This has been one of the secrets of their success—that before any movement has been launched the whole community has gotten back of it and it has to go. When the week arrived the clergymen on Sunday preached their sermons from subjects like ". . . The child in our midst." The townspeople wore tags inscribed "Baby Welfare Week." The Department of Agriculture's window was decorated with babies' pictures under the heading: *"Peel's Greatest Possession. Are they to start life handicapped or with a fair chance?"* And a graphic display below showed just how startling the death rate of children really is, even in the homes of the open country. In the church a baby clinic was going on all day, with a nurse from the Public Health Department to weigh and standardize the children and to consult with the mothers on a hundred questions of care and feeding; in another room doctors were giving advice on special or serious cases. In the large waiting room the Health Department's Child Welfare exhibit of charts and baby equipment was on demonstration, together with a model nursery fitted up by the local Women's Red Cross Society, an ideal layette and bassinette made by the Girls' Club—(the *girls,* you notice), and a demonstration of proper meals for children from twelve months to six years old, arranged by the Women's Institute. It couldn't fail to leave an impression.

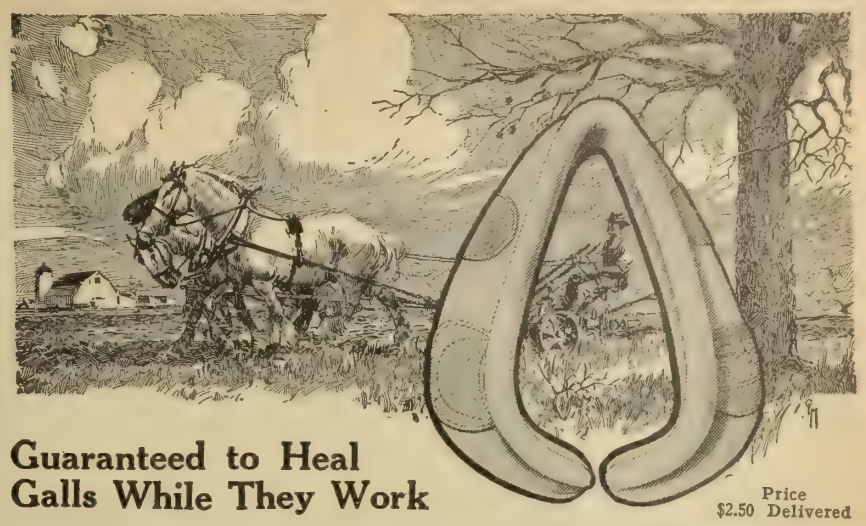
During the two days one hundred and seventy-four babies passed through the clinic. They came from the town, the country and neighboring villages—one mother drove fourteen miles to bring her baby. And there was an open meeting at night, which the men attended as well as the women and children, and they discussed such things as public sanitation, a clean milk supply, better schools and playgrounds, better housing, school nurses, and taxes on property to pay for these things. *They have a by-law now to keep the milk for the town safe and up to standard, and they have a school nurse*—the first *rural* school nurse in Canada.

HERE again we see the old trick of fortune—giving to those who already have. If the Department of Agriculture had hunted the continent over it could not have found a woman better qualified to go into country schools and farm homes and be of genuine, active service. Miss Graydon doesn't have to do any "studying of rural conditions"—she grew up with them, right in one corner of the county, too, and she has seen enough of the world in other places since to come back with a broad vision and a practical knowledge of how a lot of troubles may be corrected. By visiting a school every term she makes medical inspection a thing of permanent standing, and she has a delightful way of remembering and taking a personal interest in every individual child. Besides giving the children the regular health examination and reporting to the parents, she is introducing into the schools a most practical study of hygiene. She gives the most homey little talks on things mothers have always wanted their children to know, she has tooth brush drills and breathing exercises, and she is teaching first aid and working to get an emergency kit and safe water supply in every school. In the afternoon she holds a mothers' meeting at the school where all these things are talked over, and after she has been there once, the mothers come—even those whose children are past the school age. They admit that there is just one thing wrong with the school nurse system—that it has come a decade too late for them.

MISS GRAYDON goes by the name of "school nurse," but she is fast becoming a sort of travelling health advisor to the neighborhood. The system is that every school should have its cradle roll for the children under school age, so the home visits are one of the important features of her work. It seems so natural to hear a woman say: "The doctor told me I had a blood-pressure of eighty. What did he mean?" or "I've been troubled this summer with headache up the back of my neck. What would be the cause of that?" And if she meets with a rabid case of opposition, as a pioneer is bound to do sometimes, she has a most disarming way of staying right there and talking things over. It doesn't seem to surprise or worry her.

This fall she drove up to one farm home and the man met her at the gate and told her quite frankly that he wanted to have nothing to do with her, that he reckoned they could take care of themselves, and sundry other arguments against interfering with people's private affairs. She appreciated his viewpoint but observed that he had been

Continued on page 39



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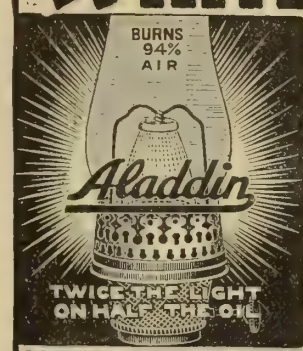

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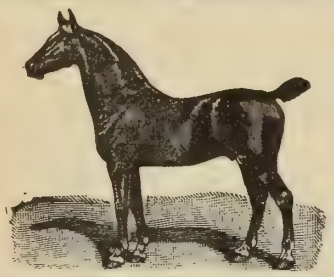

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LIVESTOCK

Canada's Opportunity

By W. F. STEPHEN

"THE Livestock Industry is on the threshold of the greatest boom it has ever experienced," declares John Fletcher, Vice-President of the Fort Dearborn National Bank, and who was formerly President of the Drovers National Bank. Here is a statement from a man "who knows," one who has given this question careful study. The most foresighted stockmen both in Canada and the United States will agree with Mr. Fletcher.

With the coming of peace there will be a great demand for meat products in Europe. Peace will not bring plenty. It will be years after this bitter war is over before there will be normal production and distribution. All European countries will require more food than they can produce. It is said with authority that "Russia is now in the throes of a famine more desperate than any yet experienced, and likely to become a world's horror before it is checked." Heroic measures will be necessary to save 40 millions of the Slavic peoples from starvation and disease.

The great bulk of the foodstuffs for Russia and Europe must come from the United States and Canada. Meats and animal fats must form a considerable part of the rations of these people, because of the concentrated form of their energy and heat giving qualities. To feed these people, the quota of meats and fats required of Canada is no small one, and how far it can be met remains largely with our producers. Unfortunately a shortage of feed in many sections of our broad Dominion prevent many stockmen from measuring up to the full in their feeding operations. However, with such a serious situation before us stockmen should bend every energy to increase their herds and flocks during the coming year.

It is our duty to develop the livestock industry in its every phase. The demand is great and will be greater for livestock of quality in our meat, animals, and *quality* and *production* combined in our dairy cattle. The breeders of pure-bred livestock have an important work to do in maintaining herds of quality and this can best be done by breeding from the *best* sires. The inferior sire is a menace to the livestock industry, which promises to be Canada's greatest national asset. The scrub sire (both grade and pure-bred) should be eliminated even if radical measures are required to do it.

With wider markets opening to Canada for livestock products, it is our opportunity to meet them and supply these markets with products in larger quantities and of superior quality. With such markets open for years to come we have no misgivings as to the remuneration for our energy and labor. That is sure, provided we can furnish a continuous supply of goods of *quality*. The producers have a big part to play in building this increasing national industry. Shall they do it? I believe they will. The packers have an important role and we believe they will measure up. They and the producers are coming together and getting to understand each other better. The transportation companies have also an important part to perform in furnishing the necessary cold storage cars and vessels to carry our produce overseas, and our Government must see that proper cold storage facilities are provided at terminals, to take care of our meats and dairy products, while waiting for the necessary ships to carry them overseas, and put them on the European markets in the best of condition. Also to see that we get a line of credits overseas that will enable us to finance this great industry. Thus we have a chain of four links, the producers, the packers, the transportation companies and the Government, working as one to build up an industry of which our nation will be justly proud, and which will enable us to pay off our war debt without feeling it in the least. Herein is Canada's opportunity.

MAKES OVER $18 PER PIG

By W. H. T.

I NOTED in your issue of December 1st, S.H.F.'s reply to A.D.C. on "Is there profit in feeding hogs?"

While not being able to feed as cheaply as A.D.C. I believe I am qualified to state from my own experience that there is money in feeding hogs. I have not been in the habit of keeping food records which may put me in the rank of "unprogressives," but accurate records were kept of seven pigs from the last litter.

The cost of feed to each hog was $11.26 and the average selling price for each, $29.85, a profit of $18.59 on each hog, not counting time.

And just here I would like to say a little about time taken in the feeding. Are not the returns from the pigs payment for time spent in feeding them?

The general rule seems to be to charge all the time to the pigs. That is all right, but then why exclude this from the profit? When reckoning up profits on a field crop does a man count the time going to and from the field as well as the time spent in it? All that is left, over the cost of feed, is return for time taken in feeding pigs.

In the course of his reply to A.D.C., S.H.F. remarks: "If he can do as he

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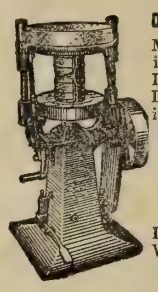

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P.S.—We sell traps. Prices furnished on request.

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Hand cement mixer pays for itself in 7 days. Write for Special Offers. Crushers, Brick, Block, Tile Machines, Power Mixers, etc. New and Second Hand Gas Engines.

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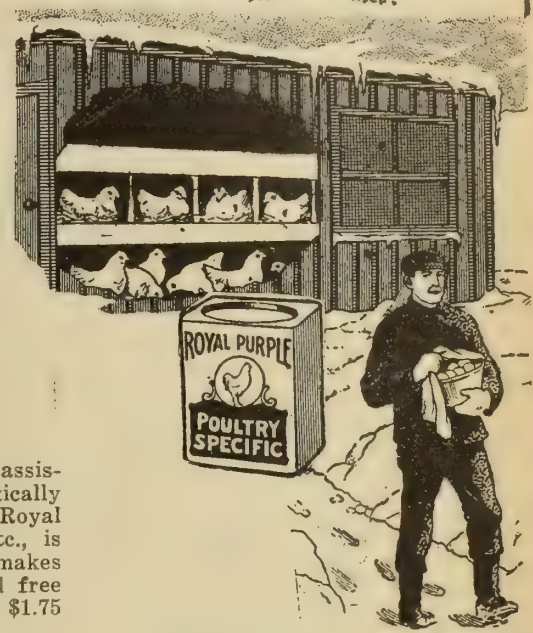
Your hens will lay lots of eggs Winter and Summer

Under the most severe weather conditions you will get plenty of eggs if your hens are properly housed and fed.



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In summer fowl get grain, herbs, grass and insects which are Nature's assistants for producing eggs. In the winter and spring, fowl get practically the same grain, but must have a substitute for the herbs and insects. Royal Purple Poultry Specific, manufactured from roots, herbs, minerals, etc., is a most perfect substitute, increases the egg production at once, and makes the hens lay as well in winter as summer—keeps the fowl active and free from cholera and kindred diseases. Sold in 30c and 60c packages, also in $1.75 and $6.00 air-tight tins.

Secure More Milk From Your Herd

You can increase the flow of milk from 3 to 5 lbs. a day by using

"Royal Purple" Stock Specific

Mr. Norman G. Charlton, Scott, Sask., states:
"I am from Ontario and fed your Royal Purple Stock Specific when in Brownsville. My cows made the largest average and tested 5 pounds over average at G.M.P., Brownsville. I believe you make the best conditioner on the market."

The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results, and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor. Royal Purple Stock Specific is put up in 60c packages and large $1.75 and $6.00 tins. Secure our products from our dealer in your town.

This pure-bred Holstein bull calf was raised by L. H. Lipsit, Straffordville, Ont., and took first prize in his class at the West Fair, and also took first prize for the best pure-bred Holstein bull raised on **"Royal Purple" Calf Meal.**

"Royal Purple" Calf Meal Reduces the Cost of Feeding Calves on New Milk 75%

When calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk.

Mr. Geo. W. Collins, Plainfield, Ont., writes:
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This Baby Food for young animals is partially predigested, and can be fed to the youngest animals with perfect safety. IT WILL NOT cause stomach or bowel trouble, which seriously affects the health of young animals, Royal Purple being a sure preventive for scouring.

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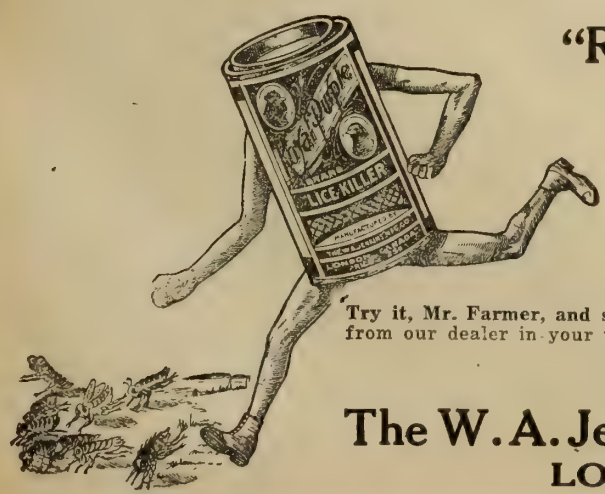

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Percy Prewer, Cross Creek, N.B., says (in a letter of Aug. 7th): "I have used your Lice Killer on a cow that was badly infested with lice. It soon rid her of them."

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Try it, Mr. Farmer, and see for yourself. Secure "Royal Purple" Lice Killer from our dealer in your town. Should there not be any, write us.

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INFORMATION WANTED

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claims he did, my advice would be to go to his bank and borrow all the money they have, and invest in little pigs and in 10 years he will be the richest man in Canada."

Well now, if we could be assured of a good market for pigs at present prices for the next 10 years, this wouldn't be a bad idea and there might be a good deal of competition for first place as "the richest man in Canada."

GET INTO PIG BUSINESS

By G. S. Roberts

I AM only a novice at farming and I was greatly interested regarding the subject of breeding pigs. I bought a full grown sow last winter, which was in very poor condition, but as the price was reasonable I took a chance. She had been bred the previous week, and, as I found out later the boar was related. As I had no feed and it was hard to get, I could only get one sack of very inferior oat chop. I had lots of potatoes; after that was finished I got shorts and bran, and mixed it with the potatoes, fed her heavily until she got a little flesh on her frame—then when her flanks were even, I kept her on that ration until she farrowed in May. She was in a 12 x 14 shed, open in front, and only got the morning sun. I had a snapshot taken of her seven pigs, five days old—I have still got them all. I don't know if you would approve of her feeding, but the results were satisfactory.

A PIG-FEEDING EXPERIMENT

By T. A. C.

LAST fall there was a considerable difference of opinion in our neighborhood as to whether pigs could be profitably fed or not. Some experienced farmers were selling off their entire stock of pigs, claiming that they were feeding them at a loss and that the price of grain was too high as compared with the price of the finished hog. Others claimed to be able to make a handsome profit in this branch of farming and were feeding more pigs than before.

With the object of settling this question to my own satisfaction, on Oct. 27, 1917, I purchased nine pigs, six weeks old, for fifty-four dollars. I bought all the feed for them and kept an accurate account of the cost. They were fed principally on shorts, with a little oat chop at first and a little barley chop and oilcake the last month. They received a little skim milk and a few mangels the first six weeks, but these were not counted in the feed cost. No value was placed on the manure either. It was estimated that the manure would be worth as much as the milk and mangels eaten. These pigs were purebred Yorkshires.

The following is the summary of cost:

Oct. 27, bought 9 pigs		$ 54.00
Oct. 27-March 15. Feed—		
Oat chop, 570 lbs.		12.35
Shorts, 1,480 lbs.		30.75
March 15-June 10—		
Shorts, 3,040 lbs.		55.19
Barley chop, 1,220 lbs.		35.30
Oilcake, 305 lbs.		9.45
Total		$197.04
Feed on hand—		
100 lbs. shorts	$1.80	
115 lbs. oilcake	3.50	5.30
Total Cost		$191.74

On March 15, the pigs averaged 100 lbs.; on June 10, they were sold; averaged 210 lbs.

Proceeds—	
June 10, 1,890 lbs. at $17.25 per cwt.	$326.02
Cost	191.74
Profit	$134.28

They did not make very rapid growth, being about nine months old when marketed.

As I had no place to store much feed, it had to be bought in small lots and this probably added somewhat to the cost. All feed was bought at market prices, which of course varied somewhat throughout the feeding period.

The average profit per pig was therefore $14.92. As this was my first experience in pig feeding I was well pleased with the result of my experiment, and have concluded that even with the present high prices of feed there is good money in feeding hogs. I also found that pigs make more economical gains before they reach a weight of 175 lbs. than after. I weighed mine regularly every two weeks, and found a steady decrease in profit on feed consumed after they reached that weight.

Editor's Note.—This looks like a real worth-while experiment, and the profit surely is not big enough for anybody to cry *profiteer* against the farmer. If the care and trouble of feeding pigs is not worth $12 or $14 a pig, over feed costs during 9 mos., then the world ought to go hungry for bacon.

MORE PIG FEEDING COSTS

By W. J. D.

REGARDING cost of feeding pigs, written by A.D.C. and S.H.F., in issues of Nov. 15th and Dec. 1st respectively, I would like to tell you at what cost I produced 735 pounds of pork from five pigs last summer. They were fed on slab oilcake (crushed) and Monarch hog feed with the exception of a bag of shorts after weaning. Of these mill feeds I fed $39.00 worth, $2.00 worth of skim milk valued at 25c. per hundredweight, and they were pastured on a patch of rape 40 feet by 70 feet for two months. A fair rental for this patch of ground would be $5.00 and I estimate they consumed one-half of it. Therefore I estimate the rape at $2.50, making a total of $43.50 for feed.

At 19¼c. per pound they brought me $141.50, so you can see that I had $98.00 after paying for my feed. The pigs, had I bought them, would have cost $25.00 and I would still have $73.00 for my work along with the profit one would have on selling the young pigs at $5.00 each. These figures may be showing as large or larger profits than A.D.C.'s, but they are correct in every detail.

I might say I was a little dubious of amount of profit credited by some farmers and, being "from Missouri," I had to be shown. The result was beyond my fondest expectations. One item that helped materially to lower the cost was the fact that all mill feeds consumed were purchased from the United Farmers' Co-operative Co. A saving of from $2 to $6 per ton was thus possible.

Editors' Note.—The ideal way to fatten summer pork is by way of the clover or rape pasture. This expenditure for concentrates will run down about as it was in this case. We would like W. J. D. to give his experience with a bunch of pigs farrowed in November and fed indoors till fat.

CANADIAN HOLSTEINS FOR AUSTRALIA

WHAT may be expected in the extension of the Holstein industry following the war is contained in the following letter from J. F. Simmonds, of Colony Farm, Essondale, British Columbia:

"Major G. F. Finley, Queensland National Bank, Brisbane, Australia, one of the original Anzacs who did some hard fighting in the Dardanelles, is returning home via America to his home in Queensland, where he expects to break in on the Holsteins. Major Finley, who is a veterinary surgeon in private life, has followed the Jersey for many years, but always had a great liking for the black and white; but owing to the scarcity of the breed in Australia, it was not possible, without importing from abroad, for a beginner to start in with real tip-top stock. Major Finley recently visited British Columbia, and looked over some prospects and expects about the first of the year (shipping permitting) to ship a few young animals to start his herd."

The Lakeview Farm of Major E. F. Osler, Bronte, Ont., is also likely to open up business with Australia, having received an order for fifteen head (one bull and fourteen females) from a buyer at Sydney.

POULTRY

MAKING HENS LAY

By R. R. Ford

TO begin with I keep Brown Leghorns as I find they lay more eggs than any other kind I have tried and also they are more active and healthy as a rule. They have free access to all parts of the barn, and as I have not any hen-house I have the roosts put up in a stone calf pen. I get as much dried or green bone as I can find and burn it in the wood stove. After it is quite well burnt I grind it up, not too fine and feed it in a box. Coal ashes are good for them also. I fed at noon one season a mash of barley and oat meal and had good results. Before the war and when food controllers were unknown I used to feed wheat for the morning ration. I always feed corn on the cob and break it up in short pieces when I have the corn along about the first of February. During December and January I only feed twice a day. For the evening meal I give oats or barley or buckwheat. In the morning I give a warm drink of water. If the water is given in a wooden bucket it will stay warm longer than in tin. It is a good plan if you have sugar beets to feed some once in a while. Be sure to supply a liberal quantity of gravel and a dust bath to keep down vermin. If these rules are followed most any one will get a good supply of eggs. I keep 6 roosters with 100 hens.

REDCAPS NOT POPULAR

By A. P. Marshall

THIS is one of the old English breeds but rarely seen here, for although the bird is of fair size it has quite a large comb which on many specimens becomes beefy and heavy. The color scheme is rather complicated and has been bred to the same perfection as in some of the more common and better bred varieties. The bird has a good straight back of medium length, a good deep, full breast and a large expanded tail. The proper weights are: cock 7½ lbs.; cockerel 6 lbs.; hen 6 lbs. and pullet 5 lbs.

The comb of the Redcap is a large rose comb, square in front, evenly serrated with small points on top and ending in a decided round spike. It should be firm on the head and not fall over to one side or the other. The head is a rich dark red in the male and brown in the female. Eyes are reddish bay in both.

The hackle of the male is slate black, each feather being edged with red developing into black at the base, and in front of the neck. In the female the red is modified to golden bay lacing, except that the front of neck in the hen is brown like the breast, whereas in the male both the breast and front of the neck are black.

The balance of the coloring can be termed as black, brown and red in the male, and black and brown in the female. The red saddle with black stripe and gorgeous wing markings make a striking male in appearance, with considerable in the half moon dark spangles on a dark ground to test the breeding ability of the most careful breeder.

ROCKS LEAD AT GUELPH

IN the egg laying contest at the Ontario Winter Fair in which five birds were allowed to a pen and the contest carried on for six days, the winnings were as follows:

1.—J. R. Stork, St. Catharines, Barred Rocks, 21 eggs.
2.—Stork, Barred Rocks, 18 eggs.
3.—F. B. Hutt, Georgetown, Barred Rocks, 18 eggs.
4.—J. C. Evans, Guelph, White Wyandottes, 17 eggs.
5.—A. G. Burns, Paris, Silver Grey Dorkings, 15 eggs.
6.—Norfolk Specialty Co., St. Williams, Barred Rocks, 14 eggs.
7.—Norfolk Specialty, Leghorns, 10 eggs.

Soldiers Home Coming Campaign

THE SALVATION ARMY

War Work and After-War Work of the SALVATION ARMY

"FIRST TO SERVE—LAST TO APPEAL"

The Salvation Army has for 53 years been organized on a military basis—inured to hardship, sacrifice and service. It is always in action, day and night.

It has maintained Military Huts, Hostels and Rest Rooms, providing food and rest for tens of thousands of soldiers each day. 1,200 uniformed workers and 45 ambulances have been in service at the front—in addition to taking care of the needs of soldiers' families here at home, assisting the widows and orphans, and relieving distress arising from the absence of the soldier head of the family.

Notwithstanding all the Government is planning to do, notwithstanding the pensions and the relief work of other organizations, hundreds of cases of urgent human need are constantly demanding the practical help the Salvation Army is trained and equipped to render.

The Salvation Army Million Dollar Fund

January 19th to 25th

While it could do so, the Salvation Army has carried on without any general appeal. Now the crisis is arising with the return of the 300,000 soldiers. The budget for essential work during the coming year has been prepared. A million dollars must be raised to continue the after-the-war activities, which include:

Hostels for Soldiers

Salvation Army Hostels are vitally necessary for the protection and comfort of the soldier at the many stopping places between France and his home here in Canada. These Hostels—or military hotels—provide good food, clean beds, wholesome entertainment at a price the soldier can afford to pay. If the boys did not have a Hostel to go to, WHERE would they go?

Care of the Wives, Widows, Dependents and Orphans of Soldiers

Scores and hundreds of cases could be cited where soldiers overseas have been comforted by the assurance that the Salvation Army has stepped in to relieve their families from dire need. As an instance, a mother with six children is located—no fuel, weather freezing, food and funds exhausted by sickness and other troubles. They are taken to Salvation Army Emergency Receiving Home. Winter and 300,000 soldiers returning increase the demands on the Salvation Army, whose personal help alone is of avail. Consider, too, the vast and complex problems arising out of the care of soldiers' widows and orphans.

Keeping the Family Unit Intact

The women of the Salvation Army on their visiting rounds accomplish the apparently impossible. Is the discharged soldier out of a job? They find him one. Is the wife sick, the home-work piling up, the children neglected? They nurse the wife, mother the children, wash and scrub. Is there urgent need for food, fuel, clothes or medicine? They are supplied. It takes money, of course, but more important is the loving spirit of service in which the work is done.

When the Soldier Needs a Friend

The Salvation Army Lassie provides the boys with hot coffee, the pies, chocolate, magazines, writing materials, and the spiritual comfort which the boys in Khaki need. Until the last homeward-bound soldier is re-established in civilian life, will you not help the Salvation Army to combat the discomforts and evils that beset his path?

The service of the Salvation Army, founded on sacrifice, demonstrates the true spirit of the Master. It is directed to the extension of the Kingdom of Christ. For two generations the Salvation Army has stood out and out for God.

It approaches practical problems in a practical way and achieves RESULTS. It co-operates with all—overlaps none. It recognizes neither color, race nor creed. It is always in action, day and night. No organization does greater work at less cost. To carry on its great work it must have financial help, and on its behalf members of the Dominion Government, business men and returned soldiers endorse this appeal for funds.

"LET YOUR GRATITUDE FIND EXPRESSION IN SERVICE"

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FARM ENGINEERING

The Farmer's Automobile

By LEONARD HENDERSON

THE farmer when he buys his automobile finds that he has an entirely different kind of machine from any other of his machinery unless he has a tractor, a machine that will require care, practice and attention before he has gained complete control and a fair understanding of the workings of the motor.

What will require the most practice will be a noiseless change of gears. To change gears quietly may require some practice, but it is better to gain some degree of proficiency in this art than every time you change gears have your car sound like the workings of a foundry. A mistake that is often made is when they are backing out of the garage or any place to start up and then stop, before starting again letting their engine race. This is especially noticeable when the hand feed throttle is used. It sounds very bad and certainly helps to shake up an engine. Also in starting up, people who have stalled their engine in starting, have learned the habit of speeding up their engine and letting their clutch in with a jerk that will start the car off with a jump. Don't let the clutch in with a jerk, but let it engage easy and when you feel it taking a hold give the engine a little more gas with the hand feed.

Beside learning the gear change, the owner will find that there are several things that will require attention. He must put water in the battery every two weeks. Distilled water which must be used can be got at a drug store in large bottles, or at a good service station. The battery should be taken out in the winter and left in some charging station, or if it is more than a year old it will probably pay to have it dry stored, that is the battery is charged up at a low rate and then taken apart and any repairs made. The owner should see that his generator charges at a fair rate and keeps the battery charged in the season.

The grease cups should be regularly attended to, the tires kept pumped up.

What wears out the quickest and probably the most troublesome thing with cars is the tires. Tires wear out quickly and it is to the owner's interest to get as high a mileage out of them as he can.

If the front wheels are out of alignment it will cause excessive wear. Most of steering gears have a way of adjusting so that it is not hard to keep the front wheels right. Uneven brakes will cause excessive wear on one hind tire. The best way to even them up is to jack up both wheels and then get somebody to apply the brakes and then tighten the adjuster until both wheels are even. Keep the brakes as tight as they will go without dragging, as draggy brakes pull the power down on the engine, while poorly set brakes may cause an accident to you or some other conveyance.

Improper application of the brakes is one of the hardest things on tires. The driver should practise and gain some idea of how long it takes to stop the car.

Some owner may be attracted by power attachment. They may give good service, but the average car will wear out soon enough without making a farm engine or a tractor out of it.

TRACTORS AT REAL WORK

By a Tractor Driver

By A. W. D.

DON'T get struck on the first tractor you see a catalogue of. A lot of the tractors will change just as the automobiles did. P. T. Barnum said you can fool some people all the time and you can fool all the people some of the time, but you can't fool all the people all the time. Decide which of these classes you are in before buying a tractor. If giraffes and kangaroos would do as well as horses or better we would be using them for such purposes on our Canadian farms. Sure P. T. Barnum plowed with elephant, but the land he plowed wouldn't feed the elephants. It paid Mr. Barnum to plow with elephants because the people paid to see the elephants plow. Humbug all the way through! As a farmer you do not want to start any museum for giraffe tractors, snake tractors, elephant tractors, or any other kind of freak tractors. You want one that will take the place of horses, one that will do more work in less time at a small cost.

You want a tractor that will not die. That is if a piece breaks, you will be able to replace it reasonably.

You want a tractor that you can take apart and assemble or that the average mechanic can, a simply got-up thing with its working parts protected from dirt; one that runs on gasoline or kerosene, not consumes it; turns short; steers nice, yes *steers* nice; remember that is what a driver spends most of his time doing.

How are you going to plow six to ten acres of land in a day if it takes ten minutes' hard work to steer around the end? Actually I have seen some arrangements for steering tractors that I am sure were taken off some of those mechanical German toys that we used to be foolish enough to buy for the kids before the war.

You don't want to be stuck up in the air a mile either. Remember the old stage coaches are all gone now. Some time you might want to work near trees or under limbs and you do not want to get brushed off or have your neck broken.

Guards over the driver wheels keep the dirt off while working. And you don't want too narrow a machine; you may want to do a little work on that field with the side hill on it.

A good low gear for emergencies is mighty nice, so you can pull like a blister. It's the stuff, don't forget.

Now for repairs I insist absolutely in knowing where repairs are kept for your machine. Go and see for yourself. Get a parts catalogue, look up the prices of different parts, and see that it is not a hold up.

Well I believe tractors are all right, but go very slow in selecting the one that will suit you. Don't go out around the tractor dealers with a $1,000 on your shoulder for the first one you meet to knock off. The worse the tractor, the better the salesman, so watch out.

Go over the catalogues and you will know which tractor you want. The only chance you have of getting the right tractor from an agent is for the proper man to just happen to come along and generally it is the other fellow who comes first. Decide absolutely *yourself* which tractor you want and do not let the agent decide for you.

THEY KNEW

"Children," began the horse-faced visitor who had been asked to address a few well-chosen words to the assembled Sabbath-school scholars, "once there was a scoffer for whom the solemn call of the church bell had no appeal. Early one Sunday morning, although he well knew that a returned missionary was going to fill the pulpit and relate for two and a half hours his experiences, the scoffer donned his oldest suit of clothes and began to crank his flivver. Now, tell me, children, how do you think that wretched man spent the rest of that Sabbath day.

And the dear little young uns arose and answered in one voice: "Cranking his flivver!"

Bolsheviki Tendencies In Canada

It is well-known that the reign of terror now being experienced in Russia, and which is commonly known as Bolshevism, is due almost wholly to the inability of the former Czar's Government to realize the serious trouble caused by its oppression of the common people.

The old Russian Government had plenty of warning of what was coming, but, instead of applying the true remedy and encouraging the normal growth of political freedom they resorted to an ever-increasing harshness that only made the matter worse. The festering sore grew below the surface, finally bursting and destroying the whole Russian body politic. In the physical body also, failure to heed the warnings of nature leads to serious trouble. That feeling of lassitude; that dull or sick headache; that bad taste in the mouth; that persistent nausea; that prolonged constipation; all these are warning signals of trouble that is brewing within the digestive tract.

When these warnings come—heed them. Begin at once on a course of Parmelee's Vegetable Pills—the fine old remedy that has helped to restore thousands of people to health and vigor.

Parmelee's Vegetable Pills go at once to the seat of the trouble. They relieve constipation by a gentle action on the intestines and tone up the stomach and whole digestive tract. They have no rival in time-proved efficiency. Taken when symptoms first appear they save many dollars in doctors' bills and fortify the whole system against the attacks of disease.

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One County's Community Work

Continued from page 33

farming all his life—he would know a lot more about it than she did; she had spent her life studying the health—care of people and nursing—she ought to know more about that. After a while he asked her to come into the house—she went and found the daughter ill, and it happened, as it usually does with Miss Graydon, that she knew just what to do. She has a standing invitation to visit that house now whenever her work brings her into the section.

So the work goes on. At the same time a quiet educational movement is spreading along other lines. In the Department of Agriculture's office there is a library of books on foods and cooking, housekeeping, mothercraft, hygiene, house-building and furnishing, home making and social topics. There is also a practical equipment of conveniences and labor-savers for the farm home, from the pump and pressure tank for a water system to the latest kind of paring-knife, and a knitting machine which is loaned out to the Women's Institutes to increase the output of Red Cross socks, as well as to help the members with their family knitting. They have a moving-picture machine and one night they jitneyed out to a meeting in a school house where the Home Demonstrator and the School Nurse spoke on the immediate needs of the school improvement campaign, and the Representative, while he gave his movie lecture, no doubt got in a few words for the next new thing he wants to start. The next week another school wanted them and they have been going ever since. Movies have been cursed unsparingly as one of the influences luring country boys and girls to the city; they will be nothing new to the young people growing up in the remotest sections of this county. Nor will the city have much else to offer that the country cannot give if this work goes on. Herein it would seem lies the greatest hope for rural Canada—the promise of a time when, instead of farmers taking their families to town that they may have "advantages," we will find city people moving back to the country for the same reason.

The Wheat Situation

Continued frome page 3

It would probably have reached at least a dollar more a bushel if left unchecked and every farmer in Canada would have had a chance to make up for all the lean years before the war. During the war, prices of wheat a good deal more than kept pace with the price of other commodities which the farmer must buy, and they dragged other farm produce up with them in their flight; but in the case of a good many farmers, there was a lot of leeway to make up, and some of them were only getting out of the woods this year. Under present world conditions, they show every likelihood of tumbling unless some artificial prop is put under them; while other prices will still remain high. Hence the wheat problem; and the unhappy farmer. Economists and grain experts have been bending their best brain-power to a solution of the problem; but they see absolutely no way out for the Canadian farmer. His neighbor across the line is sitting back with a complacent smile on his face. There promises to be a bumper crop of both winter and spring wheat, and his price is guaranteed to him for the coming year. His good fortune will only tend to make the position of his Canadian competitor all the more acute, both sentimentally and economically. For a very long distance in the Canadian Northwest, the boundaries of the Canadian farmer march with those of the American; yet on one side of the line will be hoisted the maddening "$2.21," and on the other—"?"

With the statistical position of wheat in the world what it is, with Australia and the Argentine offering to market their great accumulations at a price which Broomhall's say is likely to be under five shillings a bushel, the United States Government may find that it will have to assume a terrible burden for the benefit of its farmers, but the farmer there merely says to himself: "I should worry." The winter wheat production in the States is estimated at 765 million bushels; an average spring crop there would produce a total of well over a billion bushels, the greatest in history; and the bears of the world would be ramping. Canada's wheat might have to go begging.

It is because of this condition of affairs that the Canadian farmer is sitting tight and waiting for the Government, that last resort in time of trouble, to make a move. No one has yet made the bald suggestion that the Canadian Government should undertake to guarantee a price off its own bat; it would just about bust the Government to try it; but it is expected to use its good offices with the British and other Ally Governments to find a solution of the difficulty.

And it would really seem to be up to them. It was at their urgent solicitation that the price of wheat was kept down, and the production pushed up. Although they do not need the wheat so badly as they did, there was a time when they had to have it to keep from starving; and it was in the expectation that that need would continue that the Canadian farmer prepared a record acreage for wheat for the 1919-20 crop. It was a species of food insurance for the Allies, and it would seem only fair that they should see that the market is stabilized in some manner.

It was to help in the solution of the question that the Canadian Government decided to send Dr. Robert Magill, Secretary of the Winnipeg Grain Exchange, who is probably Canada's leading grain expert, to the Peace Conference, to represent the Canadian Government. Delegates from the Grain Exchange, the organized farmers, and the Council of Agriculture will also be there to offer their knowledge and advice. The outcome of their efforts will be watched with great interest.

There are several things which these delegates may propose. The most natural is probably some form of international convention by which the price will be stabilized and production regulated until the world gets back to normal. If Europe does not need to worry about its grain supply, it does need to look out for its supplies of cattle. The Canadian farmer, if the price for his grains is not shot to pieces, can probably be encouraged to divert his energies as far as possible to cattle-raising; but cattle is a slow crop, and he cannot afford to jump into it to the total exclusion of grain, and wait two or three years for his returns.

But if Europe is ungrateful and obdurate, and proposes to sit tight and let the farmers take their loss, what will happen? Here again, several things, only one of which need now be mentioned. The United States farmer is all right; but the Government is in bad with its guarantee. It is possible that Canada might offer to sell its crop to the United States Government and say: "Here, you take this and go to it. You will have control of enough wheat to make them listen to reason on the other side of the water." And the United States would come pretty close to having control of the situation.

POISON WEEDS IN ONTARIO

In Ontario there are only two poisonous weeds that cause livestock farmers serious trouble. These are Spotted Cowbane, or Water Hemlock, and the Common Horsetail. Both these plants are found in low places, or in sandy land which has a poorly drained subsoil, the Cowbane being especially poisonous to cattle and the Horsetail to horses.

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Becoming a Bigger Man

WHAT is the difference between some men you know and others known to you? Why are some men earning $3,000 a year and some $30,000? You can't put it down to heredity or better early opportunities, or even better education. What, then, is the explanation of the stagnation of some men and the elevation and progress of others?

We are reminded of a story. A railroad man, born in Canada, was revisiting his home town on the St. Lawrence River. He wandered up to a group of old-timers who sat in the sun basking in blissful idleness. "Charlie," said one of the old men, "they tell men you are getting $20,000 a year." "Something like that," said Charlie. "Well, all I've got to say, Charlie, is that you're not worth it."

A salary of $20,000 a year to these do-nothing men was incredible. Not one of the group had ever made as much as $2,000 a year, and each man in the company felt that he was a mighty good man. Charlie had left the old home town when he was a lad. He had got into the mill of bigger things. He developed to be a good man, a better man, the best man for certain work. His specialized education, joined to his own energy and labor sent him up, up, up. To put it in another way: Charlie had always more to sell and the world wanted his merchandise—brain, skill and ability. Having more to sell all the time, he got more pay all the time.

Charlie could have stayed in the old home town; could have stagnated like others; could have been content with common wages. In short, Charlie could have stayed with the common crowd at the foot of the ladder. But Charlie improved himself and pushed himself, and this type of man the Goddess of Fortune likes to take by the hand and lead onward and upward. Almost any man can climb higher if he really wants to try. None but himself will hold him back. As a matter of fact, the world applauds and helps those who try to climb the ladder that reaches towards the stars. The bank manager in an obscure branch in a village can get out of that bank surely and swiftly, if he makes it clear to his superiors that he is ready for larger service and a larger sphere. The humble retailer can burst the walls of his small store, just as Timothy Eaton did, if he gets the right idea and follows it. It is not a matter of brain or education so much as of purpose joined to energy and labor. The salesman or manager or bookkeeper or secretary can lift himself to a higher plane of service and rewards if he prepares himself diligently for larger work and pay. The small manufacturer, the company director, the broker—all can become enlarged in the nature of their enterprise and in the amount of their income—by resolutely setting themselves about the task of growing to be bigger-minded men. Specialized information is the great idea. This is what the world pays handsomely for. And to acquire specialized information is really a simple matter, calling for the purposeful and faithful use of time. This chiefly.

One does not have to stop his ordinary work, or go to a university, or to any school. One can acquire the specialized information in the margin of time which is his own—in the after-hours of business. Which means: If a man will read the right kind of books or publications, and make himself a serious student at home, in his hours—the evening hours or the early morning hours—he can climb to heights of position and pay that will dazzle the inert comrades of his youth or day's work.

IF business—BUSINESS—is your chosen field of work, we counsel you to read each week THE FINANCIAL POST. It will stimulate you mentally. It will challenge you to further studious effort. It will give you glimpses into the world of endeavor occupied by the captains of industry and finance. With the guidance of the POST, and with its wealth of specialized information, you, a purposeful man, aiming to go higher in life and pay, will find yourself becoming enlarged in knowledge and ambition, and will be acquiring the bases and facts of knowledge which become the rungs of the ladder you climb by.

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Western Pioneer Hints

By CHINOOK

"IF the iron be blunt, and he do not whet the edge, then must he put to more strength; but wisdom is profitable to direct."—Ecclesiastes x: 10.

It is sometimes held that agricultural journals and speakers cater too exclusively to men of means, "shooting over the heads" of beginners and others who are continually confronted with the problem of deciding what of twenty places is the most important one to spend a dollar. With a special view to meeting the needs of that large class, this department is inaugurated. The suggestions to be offered have been bolted in the gristmill of practical experience, the author being himself a pioneer. The aim is not to lecture or to point out to others, as from a pinnacle, the way to success, but rather to pass along the fruits of every-day experience, to discuss mistakes as freely as successes and to lend the new settler a helping hand.

It is not promised that the regular reading of these hints will guarantee success. There are limitations to the value of the printed word, no matter how wisely considered it may be. In farming generally, and especially in homesteading, more depends upon the natural capacity of the individual than upon the advice and knowledge with which he may be furnished. We have all seen illiterate men with business gumption and mechanical aptitude succeed where intellectual and well-educated men have failed. "Rustle" is a western term that connotes much. A good rustler will probably borrow what he cannot buy, construct what he cannot borrow, and what he cannot buy, borrow or build he will contrive to do without. There is hardly such a thing as "sticking" him. His ingenuity is equal to emergencies. Printed directions can never substitute for mother wit.

One drawback to published advice is that so often the wrong men take it. A hint to be cautious in outlay is liable to be lost upon the improvident while the over-careful class welcome it as a pearl of wisdom and confirm themselves still further in habits of shortsighted economy. And *vice versa.*

Then again, it must be recognized that there is no cut-and-dried recipe for success in homesteading. Through the very methods by which one man succeeds another will fail. So much depends upon circumstances and also upon individual liking or aptitude.

For all that, the printed word is not to be despised. Whilst it can never take the place of natural endowment, it is often a great help. 'Twould be impossible to compute the benefit to Canadian agriculture that has come through periodical literature. It presents to each individual the cream of world experience in his calling, brings the vision of opportunity, the exaltation of example, the power of knowledge. How often have you risen from an evening's reading of the FARMERS' MAGAZINE roused to action, brightened, freshened and determined to tackle the problems of your position with fresh hope and courage! Other things being equal, it is the well-informed, wide-awake, reading farmer who will make the biggest financial success and get the most out of farm life. So much for preamble.

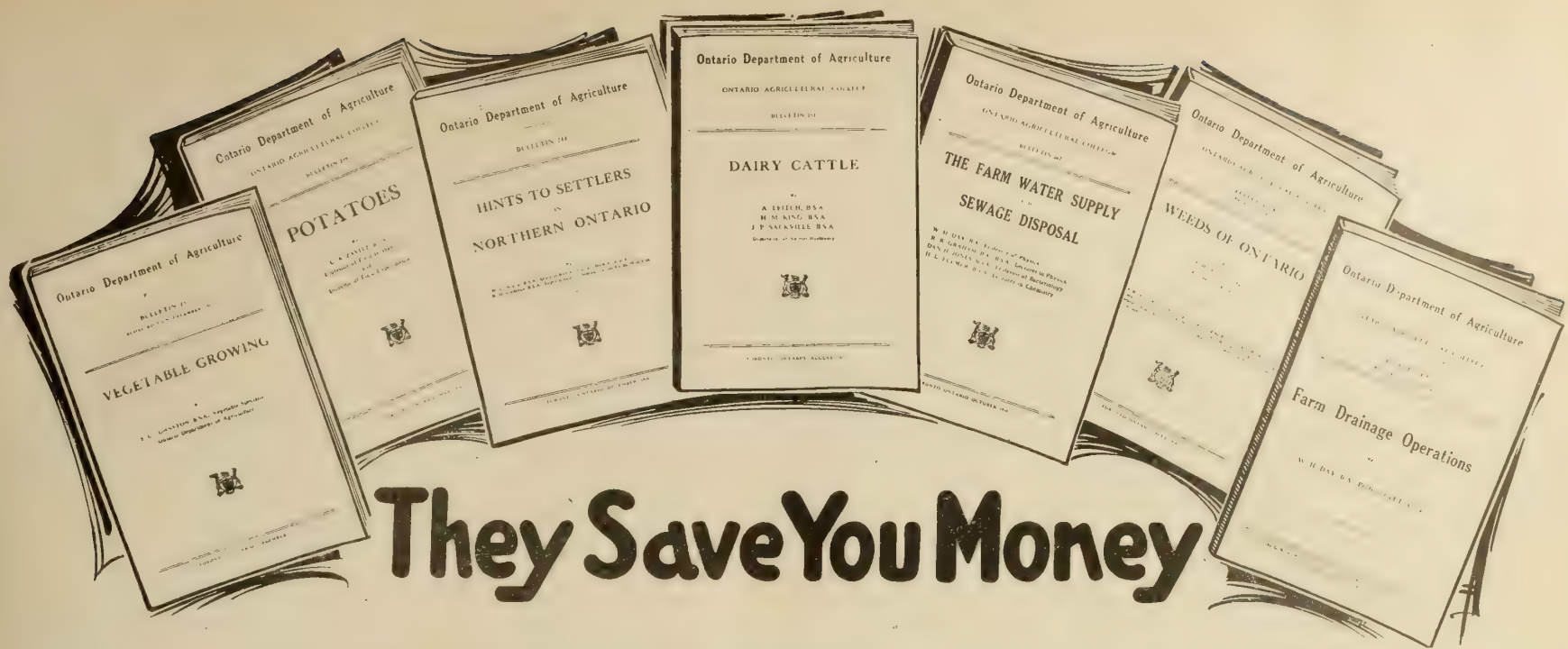
The uppermost suggestion I would offer intending homesteaders is to go slow and pay as they go, with a nest egg ever reserved to cover contingencies. I have yet to meet the first settler whose stock of cash was not exhausted, or nearly so, much sooner than he expected. Companies are usually formed under the limited liability plan, but settlers commonly commence with limited assets. They rarely have any too much ready money and it fast grows beautifully less. Store goods are dear in new countries. Grubstake, clothing, boots, working stock, harness, the family cow, tools, implements, blacksmith bills, seed, taxes, hardware for buildings, lumber and dozens of other items cause his bank account to melt away as April snow under an Alberta Chinook. Generally it disappears long before the equipment is at all complete, leaving the family to face a period of privation until some return can be realized from the few acres of breaking on the homestead. There is ordinarily no crop sown the first year, only a few acres the second, and perhaps frost or hail catches the third. Imagine the plight of a family, then, if fire clean them out or sickness plunge them into debt, or any one of a hundred things happen which always bear so hard upon the improvident! A prolonged period of hard-scrabble, an abandoned homestead or a sale at a big sacrifice is the not infrequent sequel.

Much of this tragedy might be avoided if the newcomer could profit by the experience of others. Let him realize first of all that he is embarking upon a project where the demands upon his resources will almost certainly exceed his expectations, no matter how shrewd a calculator he may be. Then let him take pencil and paper and in company with his wife or most prudent and experienced friend, go over the list of probable expenditures for the next three years, set everything down and count up the total. Let him ignore as too uncertain to be depended upon any possible crop return from his homestead within that time. (If he derive any it will be so much to the good and there will surely be a large place for it). Then let him plan cautiously in the dim half-light of these estimates. Probably about half his capital should be reserved and invested in Victory bonds, life insurance or something upon which he is to draw only in a severe pinch. Stretch the rest to cover current needs. In place of "solidifying" his "liquid" assets at once, let him keep a substantial bank account sa long as possible and help this fund out by working for established or forehanded neighbors or by any means that may be open to him. In the Peace River country there has nearly always been plenty of opportunity to earn good wages working for neighbors, taking pay, sometimes in the form of produce, which, in part, may be as good to the newcomer as cash. Besides his wages he thus obtains valuable experience of his new conditions. When one gets down to bed rock in sound financing he finds that many so-called needs are not real needs at all. He will be liable to build a smaller house than he otherwise would and in dozens of ways to cut the coat according to the cloth.

I have seen men come to our district with several thousand dollars, build large houses, invest in considerable stock before they were prepared to house or grow the feed for them; break, fence and crop extensively, try in vain for water at big expense, live well with little thought of the morrow, incur large outlay for labor and seed, get frozen out, find their funds exhausted, despair and quit in disgust. On the other hand two bright, husky, young men whose father had means, but chose to put them to an extent on their own resources, worked for me a few years ago for around thirty-five dollars a month, taking turns by six-months' periods, with the intervals spent upon their homesteads. Wideawake, but careful, they gathered a nest egg of capital, stock, implements, etc., and although not escaping the reverses of frosty seasons, they are making rapid headway, with a large acreage under crop and a full working equipment.

One is not really in harmony with the principle of prudence unless keeping a fund of ready money in reserve for the unexpected. With thrift as the constant watchword the settler's battle is half won and a thousand-dollar capital can be made to pave the road to a slow but pretty sure success.

The automobile should be jacked up and the tires wrapped to keep from light and cold.



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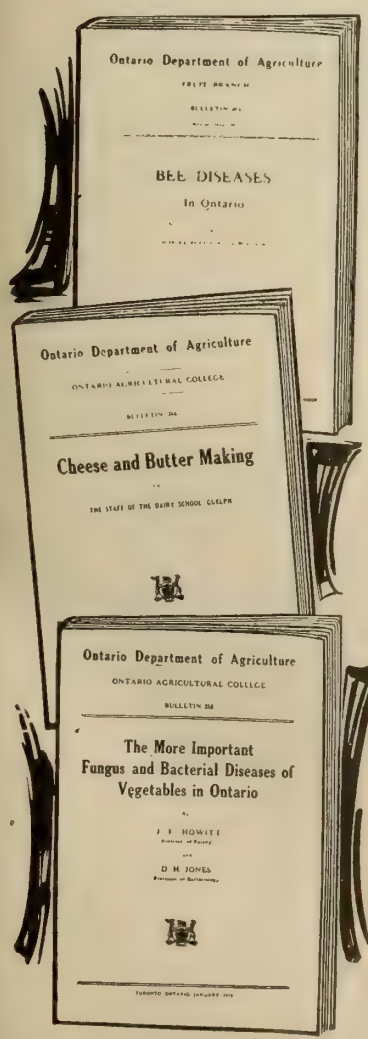

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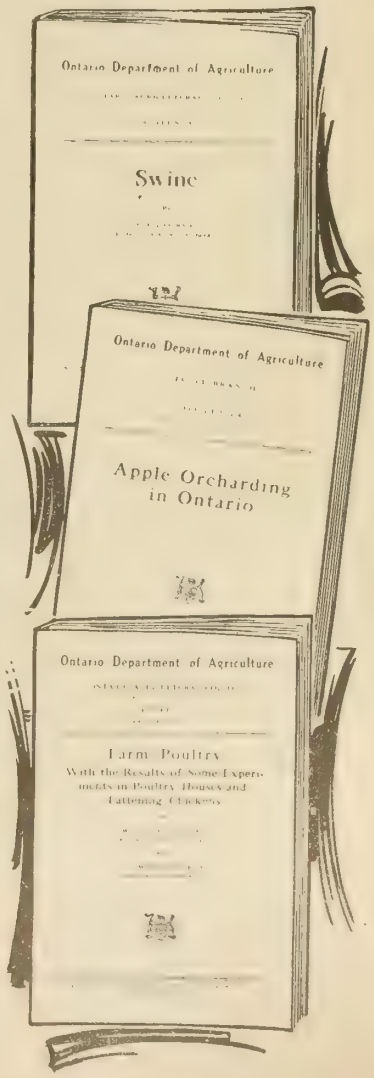

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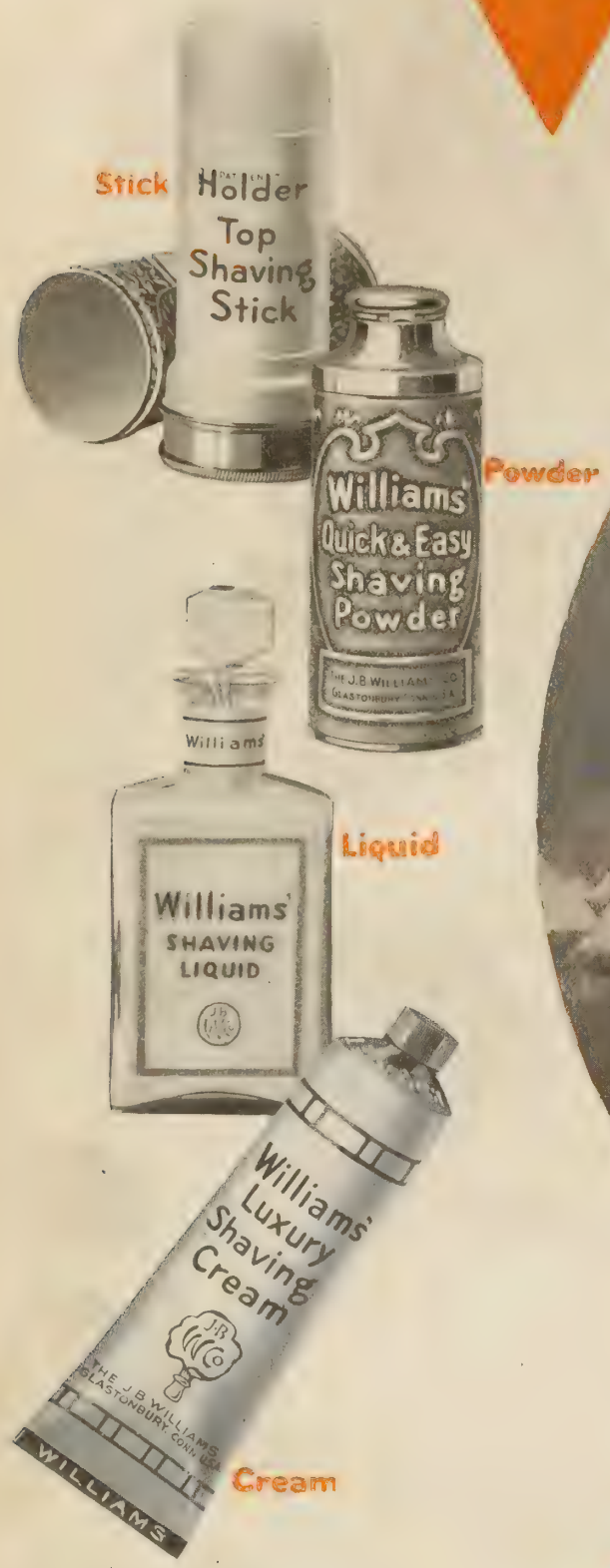

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FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto, Montreal, Winnipeg

VOL. XII, No. 2 TORONTO, JANUARY 15, 1919 $1.50 Per Year 10 Cents Per Copy

Europe Wants Our Beef

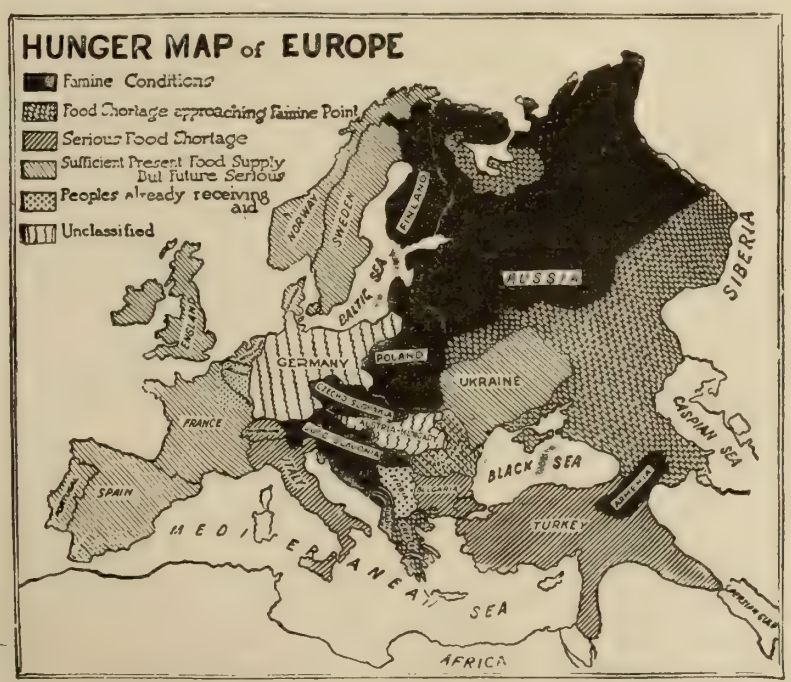
Supply Her Now----Prepare for the Future

IN Europe 100,000,000 people face either a shortage of food or actual starvation. In many countries the foundation herds and flocks have been sacrificed. It would take many times the total number of cattle, sheep and hogs in Canada to restore Europe's present shortage which amounts to approximately 115,005,000 animals.

Canada's Opportunity

During the war Canada's meat exports grew by leaps and bounds. We have the opportunity of continuing and increasing our war time exports of meats to Great Britain. Our products have become favorably known in France, Italy and Belgium, and it is likely that new trade connections will be formed. But we must have volume and we must have quality. Canada has the opportunity and Canadians can meet it.

But the question is, will the production of meat products continue to be profitable? The Canadian farmer who pinned his faith to live stock during the ups and downs of the past twenty-five years has prospered. This policy has been proved in the United States, Great Britain, Denmark and many other countries. Canada has the foundation stock and can produce the necessary feed. Considering the present European conditions, should the future hold any fear for us?



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Competition from Other Countries

Canada's opportunity is equalled by that of no other country. The United States may be regarded as a strong competitor but it is probable that before long her full production of beef will be required again for home consumption. The beef exports of the United States declined steadily from nearly 1,200,000,000 pounds in 1906 until in 1914, to supply home consumption, it became necessary to import 300,000,000 pounds. Although it is true that during the war the United States exported immense quantities of beef, that situation was due, largely, to the saving of meat by American people in order that Europe might be fed rather than to any considerable increase in production.

Canada is nearer to Great Britain than any other great beef producing country. Her superior position offers opportunity for the chilled meat trade.

Develop the Chilled Meat Trade

To realize full market value, chilled meat must be consumed within six weeks of time of killing. If the distance from market be too great, the meat has to be frozen. Frozen meat brings a much lower price than the same quality in a first class chilled condition. Time and distance favor Canada, and these are the deciding factors.

The European situation means that for years there cannot be any danger of over production of beef. Therefore—

Conserve and build up the herds—improve quality—finish thoroughly.

Beef and Bacon for Canada's Permanent Prosperity.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA, CANADA

How to get big, delicious loaves of bread

FIRST of all, remember that all wheats are not alike, owing to differences of soil, climate and seed. No two mills grind just alike. Naturally the best equipped mills grinding Nature's finest Wheat can give you the most complete satisfaction with your bread recipe. Make certain of splendid big loaves of delicious and most highly nutritious bread by using

Cream of the West Flour

(Milled according to Government Standard)

The whole world seeks the Western Canada hard wheat. Why? When you realize how rich it is in gluten, you know why Cream of the West is famous for splendid big loaves of bread. The gluten is not only highly nutritious but, being an elastic substance, it imprisons the bubbles of yeast gas, thus making your bread rise into great big swelling loaves that will delight you and make you proud of your baking every time you use our flour.

Due to the most modern and up-to-date equipment, including testing laboratory, Cream of the West flour is always the same high quality—it never varies, never disappoints you. So far as the flour is concerned, your recipe always comes out right. Certainly you should give Cream of the West a right good trial. Then you will use it always.

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The BUSINESS OUTLOOK

Commerce · · Finance · · Insurance

Canada's Field Crop Values

By F. M. CHAPMAN

THE announcement of the T. Eaton for 1918 will total $1,396,000,000, an increase over 1917 of some $200,000,000. Thus agriculture stands preeminent in the wealth of Canada. In 1917 we passed the billion mark in values of field products. It was felt that because of the short wheat crop 1918 would fall below the high levels of the preceding year. It is gratifying, therefore, to find from an examination of the returns that the 1917 lead has been beaten by over $250,000,000.

Values of field crops in the majority of the cases have been higher than in 1917. In the fodder crops we find a large yield of hay and clovers with values fully 50 per cent. in excess of the previous year. Canada had an immense crop of oats of first-rate quality, so with barley, which has been showing a recent decline in price but which decline is likely to be arrested soon by the swing of this grain to the ever-open channels of livestock feed. Hogs remain high and barley is Canada's standard hog feed. The livestock prospects outside Canada, and the efforts being made to extend markets, are recent evidence, being Premier Borden's offer to finance Rumania's purchases of food, all hold out promises of future prosperity along the livestock route.

An examination of the various field crops of Canada shows something like the following:

Crops	Bush., 1918	Values, 1918
Wheat	210,315,000	$442,000,000
Oats	456,735,000	320,000,000
Barley	83,262,000	75,000,000
Beans	3,937,000	13,770,000
Rye	10,375,000	16,600,000
Peas	4,385,000	10,962,000
Buckwheat	11,470,000	14,470,000
Mixed Grains	32,307,000	37,500,000
Flax	7,695,000	27,935,000
Corn	6,946,000	8,684,000
Total values		$966,921,000

To this we have to add the totals of the root and fodder crops which in a livestock country like Canada, assume an ever increasing importance. These are estimated quite accurately, we opine, at the following. The acres in all returns in 1918 are the highest on record:

Crop	Yields, 1918	Values, 1918
	Bus.	
Potatoes	105,000,000	$100,000,000
Roots	120,000,000	50,000,000
	Tons	
Hay and Clovers	16,000,000	250,000,000
Fodder Corn	3,900,000	20,000,000
Sugar Beets	180,000	1,900,000
Alfalfa	450,000	8,000,000
Total values roots, etc.		$429,900,000

On Basis of Values

Many items exceed last year's in values. Most items exceed in production. A few items show decreased values, as beans, peas, potatoes and roots, while hay, sugar beets, wheat, oats and rye show increased values. Comparing our field crop productions of 1917 with 1918, the showing is very favorable:

Total field crops, 1917	$1,144,636,000
Total field crops, 1918	1,396,821,000

Nor do these items take into account the tobacco, the small vegetable crops, the intensive market garden crops or the fruit crops of Canada; nor does it deal with eggs, bacon, dairy products and livestock. If we estimate value of Canada's fruit crops at $5,000,000 and these minor truck crops at an equal amount, and following up the values of livestock, we arrive at other tables of Canada's total agricultural wealth something like the following:

Item	Value, 1918
Grain crops	$ 966,921,000
Hay and roots	429,900,000
Fruit and vegetable	10,000,000
Animal produce	300,000,000
Livestock	1,047,100,000
Poultry	50,000,000
*Grand total agric. wealth.	$2,803,921,000

*Not including realty and other capital wealth.

EATON'S EIGHT HOUR DAY

From The Financial Post

THE value of Canada's field crops Company of the adoption of an eight-hour day policy for store employees, with Saturday a full holiday during part of the year and a half holiday throughout, at once demands admiration as indicating the desire of a successful business institution to reduce labor's burdens. There are a number of aspects—from the standpoint of the company, its competitors and the employee—from which the matter may be thoughtfully considered.

From the company's standpoint it is undoubtedly good business. Not only is the concern able to carry any financial burden which may be involved, but the good effect on public opinion is worth considerable to the biggest example of big commercial business in Canada. And in view of the greater efficiency, which may be expected from the employees during the shorter hours, it is doubtful if production and sales returns will fall off materially under the new arrangement.

The short hours will undoubtedly have a tendency to attract to the Eaton Company the best available help. Other concerns will quite probably find it necessary to increase wages or lose their best salespeople. This effect on the labor and economic situation will probably be farther reaching than might appear at first glance. Take in the case of the Ford Company, which not only reduced hours, but set a high standard of wages. Results, it is said, warranted the change in relation to this company, but the effect upon competing concerns, not so fortunately situated, was rather serious. Ford naturally attracted many of the efficient hands of other concerns, while those who did not respond were in a favorable position in demanding higher wages.

So far as the average employee is concerned, shorter hours no doubt adds to the contentment of mind and through enlarged opportunity for creation should increase efficiency, but idle hours provide also greater opportunities for spending. Further, it must not be forgotten that the official schedule of hours applies to the rank and file of the workers only. For those in executive positions "office hours" are usually waking hours; there is no time schedule for those who work with the mind.

Editor's Note.—How far will this affect farmers' business and just how far will farmers favor an eight-hour-day mail-order service that draws such distinctions between city and country?

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FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII JANUARY 15, 1919 No. 2

REPATRIATION---*by the* All-Land Route

By J. R. BLACK

NOW that the stress and strain of the great war is over, one of the big problems confronting the Allied Governments is the replacement of discharged soldiers in the walks of civil life. This problem arose, one year, at least, prior to the armistice; and, in more than one country, it had assumed a practical shape. Disabled soldiers and men still in the fighting ranks were given treatment calculated to fit them for participation in civic affairs. They were taught in hospitals, during their convalescent period, and when out of the trenches resting, in such subjects as are covered in the public schools, and high schools, and, in some cases, when men had previously entered the university help was extended them, so that on their return to university life they could resume work in advance of where they left off. Iu addition to mental culture opportunity was given for training in handicraft.

Toward this movement Canada was sympathetic from the first. Her statesmen, publicists, and military leaders actively participated. By most of our public men, however, the emphasis came to be placed on the work of getting as many of our ex-soldiers as possible on the land. It was realized that Canada has still much land awaiting occupants to till it. And, if suitable men can be settled on it, not only will their own comfort be secured, but a valuable contribution will be made to the world by the increased quantity of foodstuff sent to the outside markets.

In the carrying out of this scheme, however, the civil authorities are meeting with two difficulties at the outset. One of these is in the location and present ownership of the land itself. For public lands, suitable for cultivation, are either forest covered, as in Northern Ontario and the northern parts of Alberta, Saskatchewan and British Columbia; or they are too remote from railways, if of a prairie nature. Elsewhere, in the older settled parts of the East, and on the Western prairies, there is much good land to be had and conveniently situated to railways, but it is either owned by individuals or corporate bodies, who hold it mainly for speculative purposes. To make this land available for ex-soldiers who desire it, it is proposed that railways shall be built in parts too remote from them; and in parts where railway facilities exist, to buy up suitable farming lands offered for sale by their owners, or held for speculative purposes. And when the price asked is considered excessive, it shall be fixed by arbitration. The land thus made available would be vastly more than is necessary to meet the requirements of all ex-soldiers who desire land for homes. In the claybelt of Northern Ontario are several million acres of arable land capable of producing cereals, root crops and grasses of a quality and quantity to amply reward the husbandman. And in Northern Saskatchewan, Alberta and British Columbia are vast stretches of prairie and wooded land, variously estimated at from one hundred and fifty to two hundred and twenty-five million acres, and of as good soil as exists in any part of Canada. The public outlay to make these lands available for settlement would be only temporary; the outlay for railways would soon be met out of current revenue sure to result, as has proved to be the case in other sections of the West. To secure possession of land, in parts now under cultivation, it is proposed by the Federal authorities that each provincial government shall take the initiative to acquire possession, paying for the same in cash or in bonds. The Soldier Settlement Board, appointed by the Federal Government, and whose jurisdiction is co-extensive with the Dominion, will assume control of such of these lands as the soldiers may select, and reimburse the province for its expenditure. This Board will then sell the land to the soldiers, payable on a time basis of twenty years or more on the Amortization plan. The allotment of land will be limited by its value, with a suggested limit of $5,000. Thus of land at $50 per acre, the soldier could acquire a hun-

A crippled soldier plowing sod with a tractor on the University Farm, Saskatoon.

The fitting of returned men to the soil is a subject upon which few have vision enough to successfully put forward advice. The question of farming, as S. C. Drury said at the farmers' meeting in Toronto, is largely one of sentimental attachment to the soil, and unless the soldier loves a piece of earth or has that all-pervading joy in seeing things grow, he is liable to make farming a poor occupation. Successful farmers love their work and to them it is the finest business under the sun. Thus all repatriation schemes must allow a wide margin of choice and carry provision for a wise assistance to deserving ones at critical times. Two things are certain, the colony idea is distasteful and the parental idea is dangerous. Treat the soldier as a business man and let him settle on older Canada farms, to make our old neighborhoods brighter.—Editor.

Returned soldiers operating tractors cutting wheat and threshing operations before the Duke of Devonshire and party in Saskatchewan.

dred acres, while of land whose value is only twenty dollars an acre, his farm would comprise two hundred and fifty acres. The initial payment required of the soldier is one-tenth the price. But even of this he may be relieved at the discretion of the Board.

THE second difficulty in the settlement on the land of discharged soldiers *lies in the men themselves. Not all soldiers who desire land will make a success at farming it.* Some are physically unfit, and some are unfitted by ignorance. They have never worked on the land, and know nothing of the essentials underlying successful agriculture. It is hence planned that each applicant shall be passed by a committee in whose judgment the candidate is likely to prove a success in agriculture. This committee shall be composed of practical farmers. But some of the men thus certificated will be some who require technical training. And to secure this they will be sent to Agricultural Colleges. In these they will be given a twelve weeks' course in intensive education in agricultural work. This will consist mainly of field and animal husbandry, and the use of farm machinery. In connection with field husbandry they will study various crop rotations, tillage methods, cereal and forage crops and selection of grain. The course in animal husbandry will cover a practical study of the types and market classes of livestock; the breeds best suited to the different sections of Canada, and the general care and management of the same.

The next step is to farms owned by men well known to be in sympathy with the rehabilitation of soldiers. Here they will, for six weeks, be given object lessons in the proper cultivation of the land, and the care of all useful forms of life on it.

At the end of this time he is expected to enter farming on his own account. On his entrance, the Board will provide him with livestock and equipment up to fifteen hundred dollars, without interest, for two years; and subsequently at five per cent. should any of the original amount remain unpaid. Provision is also made for monetary aid in case improvements are necessary, for the Board may advance him, for this purpose, $1,000 additional.

Once at his work the soldier-farmer will be helped to make good by the advice of paid instructors travelling in the service of the Central Board.

IT will be seen from this programme, here outlined, that the Government's efforts at locating ex-soldiers on the land, is limited to the placing of the men on land adapted only to grain growing or mixed farming. But the scheme should be broadened to cover the utilization of land fitted only for ranching purposes. And of this kind of land there are millions of acres, in blocks scattered all the way from the Atlantic to the Pacific. This land is not capable of any use other than the breeding and maintenance of sheep, cattle and horses. Much of the prairie country now cultivated profitably for the growing of grain was formerly utilized as ranches. But with the advance of settlement it became too valuable to be kept longer as ranch land. Hence large flocks of sheep and herds of cattle have been broken up and disappeared on the markets of the world. This result has been seriously felt in increased prices of mutton, wool, beef and leather. It would hence seem to be a sensible policy to stimulate the taking up of wild lands of Canada fit only for the raising of domestic animals. Yet for a soldier to choose such land to utilize it for ranching purposes, the Government makes no special provision. Just how this lack would work out in all cases may be learned from the result in the following concrete case: A returned soldier recently chose a stretch of homestead land containing two hundred acres, on which he intended to start a cattle ranch. The price of the land was low—a dollar an acre. But it was admirably adapted to the growth of grasses for pasture in summer—and for fodder in winter. He had no capital, however, and, therefore could not buy cattle to stock the ranch. And on application to the officials charged with the duty of helping those beginning regular farming, he found that no provision had been made for giving material aid in his case. Now it ought not to require urging for the Government to provide the necessary initial capital for a man who desires to go into stock-raising instead of the growing of grain.

With this exception, however, the Government's programme, in the settling of soldiers on the land, has much to commend it. More people on the land is an imperative need of Canada. For if, as some publicists assert, Canada has natural resources sufficient to sustain a population of seventy-five million people, this means that at least, thirty-five million must till the soil.

DAIRYING *in* SASKATCHEWAN

By Harris K. Adams

THE development of the dairy industry in Saskatchewan since 1905 has probably been more rapid than in any other province for the same period. In the season of 1904 five creameries operated in the territory now included in the province and the total output of butter was 100,513 pounds. Each year since, new creameries have been established and the output greatly increased. Last year thirty-one creameries were in operation, fourteen privately owned and operated, seventeen co-operative concerns, owned by the farmers and operated on a co-operative plan by the dairy branch.

The output by the privately owned creameries in 1917 was 1,772,608 pounds, having a total value of $567,087.75. The output of the co-operative creameries was 2,538,061 pounds, with a value of $771,092.36. The total amount of creamery butter manufactured in the province during 1917 was 4,310,669 pounds with an aggregate value of approximately $1,340,000.00.

Co-operation in Production and Marketing

One of the most important features in connection with the Government's service to the dairymen of the province is the excellent system of marketing which has been established. The very rapid increase in the output of Saskatchewan creameries soon necessitated the marketing of large quantities of butter outside the province. While good quality is essential to the development of a large trade in any market, it was realized by those in charge of the work that if Saskatchewan butter was to secure top prices in the best markets outside the province, the production of goods of the highest quality was of paramount importance. Every dairyman and creamery manager realizes that the flavor and keeping qualities of butter are largely regulated by the quality of the cream delivered by the individual producer. Hence to maintain the output of a creamery at the highest standard of quality requires the co-operation of every patron supplying cream.

The securing of this co-operation is one of the duties of creamery managers and others interested in the development of the dairy industry. As is the case in any new country there were many farmers in Saskatchewan who had very little knowledge or experience in dairying, so that at the beginning of the movement many cream producers lacked a knowledge not only of their responsibility in connection with the quality of the finished product, but also as to the methods which should be employed in handling both dairy stock and dairy products. In the early years much was accomplished both in the way of increasing production and improving the quality of the product by direct educational work. But advancement was very slow. Consequently, though considerable improvement in the quality of creamery butter was noticeable each year, marked improvement did not come until the system of paying for cream according to quality, now commonly known as the grading system, was adopted.

Introduction of the Grading System

This system was first introduced in the co-operative creameries operated by the dairy branch. When the system was adopted in the spring of 1912 it was regarded as a radical step, but through some complaints were made concerning its working, it has proven most successful. The grading system has not only been continued and extended in the co-operative creameries, but it has proven so satisfactory that it has since been adopted by most of the private creameries operating in the province. The adoption of this system has undoubtedly been responsible, more than any other one factor, for the great improvement in the quality of Saskatchewan butter.

Confidence on the part of the dairyman, in the fairness of the system under which his product is purchased, and in the honesty of the management, are two requisites to maintaining a large creamery patronage. The grading system is now so generally understood as to need little explanation, but a brief statement of it might be given. Certain standards are set for different grades of cream, usually three separate grades being established and the price per pound for butterfat paid to the patron varies with the different grades. At most creameries three grades are adopted with standards somewhat as follows: To secure the best grade, cream on reaching the creamery must be perfectly sweet and fresh, fit for domestic use, and for this grade a premium of two or three cents per pound is paid above that offered for the next grade. Second grade cream may be slightly sour, but must be clean and fresh flavored and free of lumps or curdy matter, while in third grade, cream may be slightly off or strong in flavor, but must be of a smooth and even consistency. A difference of from one to three cents per pound of butterfat is usual between second and third.

The adoption of the grading system, in addition to encouraging thrift and rewarding merit on the part of creamery patrons, has been the most important educational factor ever introduced in connection with the creamery system in Saskatchewan. Every cream cheque which goes out showing the variation in price of the different grades, is in itself an educator, and in addition the higher price offered for the better grades is a constant incentive not only to careful work, but to a study of improved methods.

Government Grading a Great Help to Marketing

The officials of the government dairy branch and the creamery managers besides preaching to the cream producers have put their preaching into practice in the handling of butter. The grading of butter for export was first introduced in the spring of 1914. An official government grader was appointed that year, and all butter for export manufactured in the co-operative creameries was graded and sold under government grade certificate. Government grading proved a decided benefit, so much so that it was decided to extend the system, and since the spring of 1915 the government's grading and marketing service has been available, without charge, to all creameries in the province.

A uniform system has been devised for marking each box of butter to be graded, showing the creamery at which it was manufactured, the number and date of the churning, etc. A detailed report of the score on each churning is sent to the creamery manager where the butter was manufactured as soon as the grading has been completed, so that the maker of the butter may see at once the headings under which he has been scored down and the reasons for the deductions made.

By the general adoption of the system of butter grading, as it obtains in Saskatchewan, following the general practice of cream grading, a chain of co-operative effort for meeting the exact market demands was completed from the producer to the consumer. The official grader, though not prominently before the public in this connection, is a very important link in the chain. By keeping in close touch with the specific requirements as to quality and flavor, of the trade supplied, he is in a position to keep each creamery manager regularly informed as to the needed alterations in his methods of work.

Saskatchewan's export butter trade is increasing rapidly each year and during 1918 nearly all the export butter from the private creameries, as well as that from the co-operatives, was graded and sold under government certificate. The importance of the trade which has been built up under this system will be better realized when it is stated that after supplying the requirements of her own population more than 280 carloads of government graded butter have been shipped out of the province during the three years the system has been in operation.

Ways of Selling Farm Products

By E. I. FARRINGTON

At G. B. Curran's meetings at Napanee, Ont., recently, the spirit that pervaded all the gatherings was one that clamored for better salesmanship for farm products. Every farmer knows that production has been advocated for years, largely due to war needs. But now the slogan of better selling methods is the one for all of us to use. We must produce the goods, put them up honestly and attractively and get the markets. Any farmer's ideas on this subject are welcomed.—Editor.

HUNDREDS of farmers who grow excellent crops fail to get adequate returns because they lack skill or experience in salesmanship. This is no discredit, of course, for it is only an occasional man who is equally successful as a grower and as a salesman. Still there is no reason why farmers should not acquire better business methods than many of them have yet adopted. Of course it is necessary to adapt one's self to local conditions, yet much may be learned from the experiences of others. Methods which entail co-operative effort, the assistance of a paid agent, and greater or lesser complications can be adopted only in fairly thickly settled farming communities. It is only here and there, too, that such methods can be carried out successfully.

There are innumerable plans, however, which the individual can put into operation. During the last three or four years war time conditions and the lack of labor have interfered with all markets. As a result there has been a marked increase in direct dealings between the farmer and the consumer, both in the Dominion and across the line.

A. K. Bassett, an apple grower not very far from the Canadian line, has been particularly successful in this manner of selling fruit. Last year he disposed of nine hundred barrels of apples, forty per cent. of which went directly to the consumer, while the balance was sold to small dealers, eliminating all commissions and getting the apples into the hands of the consumers with but little transportation, which was a help to the Government. Mr. Bassett has been selling his fruit by the direct method for several years, and has found that he needs two classes of apples, one for the home trade, and another for dealers. He likes Wealthy, McIntosh and Snow for direct sales. Duchess, and some other apples which spoil quickly, are sold readily through retailers, who dispose of them in small quantities in a short time. Mr. Bassett says, though, that he has been surprised by the orders from individual customers for Duchess apples. Probably the buyers are canning or drying them, which is an exceedingly wise plan now-a-days, when early apples can be bought for half the price of winter varieties. Indeed, if one has a large number of early apples, this is a plan to be advocated. Certainly the sale of early apples has been unusually good this season. Some farmers who had about decided to cut down their trees of early varieties, reaped a harvest, finding these trees to be among the most profitable on their farms.

Good Quality Counts

Individual customers are willing to pay for superior apples, even though the price be high. To prove this point, Mr. Bassett tells of one fall when apples were rather scarce. He had on hand a good supply of two varieties which were not of especially high quality. They were advertised at $1.50 a barrel, while Fameuse apples were quoted at $4.00. To his surprise, he found that customers whom he had confidently expected would buy the cheaper fruit insisted upon having the higher priced variety because of the extra quality. Yet, Mr. Bassett has some customers who always want cheap apples. He keeps careful track of all persons who buy off him, with a note as to their preference. Sometimes when he wants to hasten early orders, he gives a free barrel with a club order, and says that this plan works like magic.

Selling direct has many advantages. For one thing, the cheques come with the orders when direct sales are made, and even when the fruit goes to retailers, payment is almost always prompt. Moreover, the seller gets his own price, instead of taking what the commission man may choose to send him.

Much emphasis is placed upon the necessity of good packing. This is a point where many farmers make a mistake. They think that because they already have the order and are sending direct to a town buyer that the packing is of little moment. Yet it is highly important that a good impression be made when the box or barrel is opened, because the really successful grower tries to make a permanent customer out of every man or woman who places a trial order. Mr. Bassett thinks that many apples are packed too tightly, causing them to be badly bruised. It is his plan to pack the best grades with cushions at the heading. If apples are packed very tightly they are apt to be bruised through several layers, especially if they have been handled in the cars. There is danger, of course, on the other hand, that the apples will be packed too loosely, in which case they will be shaken and bruised.

One fact which has been an important consideration this year is the opportunity offered, by direct selling, to economize on barrels. There is much less necessity for having uniform barrels and barrels of a certain specified size when sales are being made direct to a consumer. Mr. Bassett has bought as many as three hundred sugar barrels in one session at stores and canning factories. These sugar barrels hold four bushels, and the buyer is informed of this fact, and charged more than he would be charged for a standard sized barrel. He appreciates this fact and is satisfied.

Selling fruit direct offers an excellent opportunity for getting into close touch with consumers, and thus to develop a market for other farm products. Moreover, a business like this increases with its own momentum, if the service is satisfactory. One difficulty, especially when selling apples, comes in the grower's inability to control the size of the crop. One year he may have an abundant supply, the next year not enough of the desirable kinds to fill his orders. The customer who is lost because of this fact is likely to be lost forever.

Selling Strawberries at Long Range

A farmer who makes a specialty of strawberries has been led to adopt an ingenious selling method, owing to lack of pickers. This man lives a long way from any city, but near several farming settlements. He let the fact be known that he had a large number of strawberries to sell, and that he would dispose of them on the plants. The response was prompt, and the plan has now been working well for several years. Usually the picking is done by a farmer's wife, and possibly two or three of her children. They go into the field with a crate of boxes, and work until the crate is full. Often, of course, the amount desired is much less, but it is seldom that a farmer's wife will come to pick less than four or five boxes. If she picks a crate, she may sell some of her fruit to her neighbors, and make enough profit so that she gets her own strawberries for her labor. The price charged by the owner of the field averages about eight cents a quart box. This gives a better profit than hiring pickers and packers and selling the berries through regular channels. Moreover, a great amount of worry and energy is saved. Perhaps the plan would not be workable near a large city where only a box or two would be picked at a time, and by pickers who might tramp on the plants and do considerable damage. As it is, there is very little loss from this cause.

The right way to dress a goose.

The same plan has been followed to some extent by the growers of apples and peaches, when the trees are low and when the orchards are on automobile roads. Many buyers delight to pick their own peaches, paying for them as they leave the orchard and carrying them away in their machines.

The Auto Trade

The automobile trade, however handled, has been found highly profitable by many farmers selling both fruit and vegetables. The writer knows of one man who has sold over forty dollars' worth of garden truck by the side of the road in one day. In the fall, this same man has sold garden produce and taken orders for apples to the amount of more than a hundred dollars on a single Saturday. Of course he has a favorable situation near a prosperous city, and has become well known to automobile owners.

Another fruit grower puts up signs all along the nearby roads when his crop is ready, inviting motorists to come to his farm where they can make their purchases at the packing house and carry away the fruit in their machines. His crop comes later than that from sections further south, but he helps to hold the trade by advertising in local papers, stating that he is going to have a fine crop of nice fruit, and asking buyers to wait for it so as to get the native article.

At first there was a tendency on the part of town buyers to expect rather low prices when buying direct from farmers. They have now learned, though, that they cannot look for any marked concessions of this kind, but that they get a higher quality and fresher goods, which is an important point. Many farmers who sell direct to consumers also have a store trade. They need to ask prices almost equal to those of the retail market in order to protect these stores. More time is required to sell at the door and ship single barrels or boxes to town customers than to handle a large amount of vegetables or fruit in one pack. Probably on the whole, though, it pays to charge a little less than the highest retail prices in the city, although more than could be obtained from the wholesale dealers or commission men. Then the farmers obtain an increased profit for themselves, while encouraging people from the towns to visit their farms.

Roadside Signs Aid

The use of advertising signs by the roadside has come to be quite general in some sections and has proved worth while. Last fall a number of signs advertising sweet cider were to be seen, some of them

A naet sign by the roadside, in a leading fruit district.

quite conspicious. Selling cider in this way, if the quality is good, is an excellent way to start a direct-to-the-consumer trade. It is usually possible to have a good stock of apples on hand, and scores of buyers, attracted by the sweet cider sign, will carry away a box or two of fruit.

Any farmer who anticipates developing direct sale plans must realize the necessity of adopting business methods. He will need printed letter-heads, and he ought to have a typewriter. If he has a daughter of school age, who has been taught something about book-keeping and typewriting, he will have a decided advantage. In any event, it is of high importance that his correspondence be neat and legible, and that he keep an account book wherein all his transactions are recorded. This will prove to be of great help in developing trade from year to year.

Where the roads are traveled largely by automobiles, the chances of a roadside stand are good.

The Auto Truck Pays

Automobile trucks have brought farm and town very much closer together. It is now a simple matter for farmers to deliver goods to individual customers or retail stores within a radius of twenty-five or thirty miles. The writer knows of one strawberry grower who has a truck fitted with five decks on which are placed boxes of strawberries for sale in a nearby city. There being no weight on the fruit, the berries are as fresh and attractive looking when they reach the city as when they were picked. All this man needs to do to sell his fruit at retail prices is to drive his truck slowly through the street. It advertises itself. If he prefers to sell direct to a retail store, the berries are delivered in much better condition than those brought in crates from other places. Accordingly, the dealer is justified in advertising them under the special label of this grower and charging more than the market price.

These are some of the different ways in which modern business methods are being applied to the selling of farm crops. It is a line of work which is certain to be extended, and with profit to the farmer as well as benefit to the consumer. There is no doubt that the middleman is a necessity, as business is now arranged, and that he could not be well dispensed with At the same time, the farmer who is able to get along without his assistance is likely to make more money than the one who is at the mercy of the buyer.

WHAT IS BOLSHEVISM ANYWAY?

By Peter McArthur

FOR months I have been trying to find out something illuminating about Bolshevism—something that would help me to understand this most recent human manifestation. In spite of all that has been written on the subject I see no reason to believe that what is called Bolshevism in Canada is the thing that goes by that name in Europe. If the Canadian brand is truly represented by the pamphlets from which I have seen quotations it has humorous aspects that should be dragged into the light. For instance, these new propagandists propose to manage the affairs of the world, and they specify with some detail just what businesses they will take over. But I notice with interest that they make no mention of taking over farming. *Evidently our Bolshevists think farming a good thing to leave alone. If they took it over they would have to work*—and work does not seem to be an important part of their program. From what I am able to gather, *they expect shorter hours and higher wages, getting shorter and higher as Bolshevism develops* until work disappears and wages become inexhaustible. But nothing is said about where the food of the world is to come from while these wonderful things are being done. Apparently these proposed revolutionists think that food is like Topsy—that it "jest growed." And they are not unlike a great many other people in this. When the conservation campaign was at its height, a city friend remarked to me with evident sincerity that until the need of saving became important it had never occurred to him to think where his food came from. He always found it on his table at meal times and that was all there was to it.

IT is probable that Bolshevism as known in Europe is only a new name for an old thing—for the anarchy that develops among any oppressed people "when a week's Saturnalia has loosened their chains." Some despatches from Europe would lead one to believe that Bolshevism is simply the politics of hunger—the line of action dictated by the sufferings of starving people. If that is so the *Globe* is probably right in suggesting that we would make more progress by feeding the Russians than by fighting them. On the other hand we get despatches that outline Bolshevism as a well-organized movement, with armies and propaganda funds. But there is no clear statement of what it proposes to do, beyond upsetting the existing order of things and setting up some new order in which everything will be ideal. As I read these conflicting despatches I wonder who is looking after the breadbasket.

Bolshevism must have its meals just as well as Czardom. The most hopeful news from Europe is contained in such articles as Will Irwin's, which tell how the people of the devastated regions of France and Belgium are putting the question of food before everything else. Even before they try to rebuild their houses they will try to get their land under cultivation. They know that if they have food they can manage to get along without a lot of other things or will have the needed energy to get the other things. If all the nations would centre their attention on the food question for a while they would perhaps find that most of their troubles would disappear. Even an anarchist will modify his views when he meditates on his grievances on a full stomach.

I DO not think I ever knew a time when the news in the papers was so contradictory and unsatisfactory. It is by no means unusual to find on the same page of a paper articles that flatly contradict each other. Germany is starving—and it has plenty of food. Clemenceau and Wilson are in entire agreement—and they are as far apart as the poles. Lloyd George and Wilson are agreed about the freedom of the seas—and they are likely to be permanently divided on this question. You may take your choice as to what you will believe. A few weeks ago the papers were printing maps showing the parts of Europe that are doomed to starvation this winter—and it is weeks since we have had any word of Hoover and what is being done to feed the starving. It is also weeks since we have had any satisfactory news about the soldiers and their doings. We still have no explanation as to what authority anyone has for sending drafts of Canadian soldiers to Siberia. Some say that only volunteers are being sent, but letters have reached me from the mothers of boys who have been drafted and sent to Siberia against the wishes of their parents and their own wishes. It seems impossible to find out who is to blame for this state of affairs. And the situation is getting worse in all sorts of ways. A disgusted housewife remarked to me recently: *"The price of bacon went up because of the War. It went up again last week. I suppose that was because of the Peace."* The same complaint applies all along the line. We had propagandas and censorships because of the War and now we have them because of the Peace. I am beginning to suspect that a lot of people are exceeding their authority in both War and Peace. They are apparently forgetting that they are not dealing with the docile peoples of Europe. *Some day soon we shall drop in on them and ask disturbing questions.*

AMONG these contradictory news items from Europe there are some things that are of interest to Canadian farmers. We are assured on the one hand that Canada and the United States must feed starving Europe, and on the other hand that England and France are preparing to produce food on a scale that will make them independent of the outside world. That does not look like a permanent market for Canadian farm produce. We are assured that the farms must pay the war debt, but how can they do it unless there is a market for farm produce? Apparently the only thing to do is to adopt Asquith's "Wait and See" policy. I do not mean by that that work should be neglected, but obviously there is no need of building castles in the air until the news of the world becomes more authoritative. But no matter what happens the farmer has much to be thankful for. He is sure of his food, shelter and clothing, even if he may not be sure of profits. The farmers are the only class in the community that can "wait and see" without undue alarm. The others depend on other things than the direct fruits of their labor for their living.

IF France and England and other European countries adopt a policy of making themselves independent of outside supplies, they will force the same policy on other nations—even on us in Canada. If they will not buy our products we cannot buy their goods—that's flat. So it is just possible that one of the effects of this war will be to make us more self-reliant and less dependent on other people for our needs and comforts. And I am not sure that that would be a backward step. The early settlers knew how to produce almost everything they needed, except salt, and they were a healthy people in body and mind. But the adoption of such a policy on the part of Great Britain would result in wiping out much of what we are accustomed to regard as civilization. Manufacture and trade have made all the nations of the earth interdependent and if powerful nations undertake to be self-sustaining they will bring down everything. Probably that story was just another of those unreliable depatches that are coming across just now. The greatest danger about the Peace Conference and other great things that are in progress just now is that they may start something of which no one can foresee the consequences. Personally, I have become timid about great schemes, no matter how attractive they may seem on paper or sound when delivered from the platform. *The result of the war turmoil has been to make me think a whole lot of such basic things as regular meals,* reasonably decent clothing and a comfortable place to sleep at night. Also the old-fashioned law and order that guarantees these things to us. *Somehow the war has made homely things seem more important than anything else.* That is why I welcome everything I see in the despatches indicating that the people of Europe are resuming their old daily tasks. If they do that it will not matter too much what they do at the Peace Conference. I have an uncomfortable feeling that many people expect the Peace Conference to do what Germany failed to do—to put the world under a central control. That will mean greater authority to be wielded by some person or persons than has ever been known in the world before. And too much authority is a dangerous thing to intrust either to Czars or Bolsheviks—to Kaisers or to "Better Elements." We are told that this new control will be democratic, but that is impossible. A true democracy is one where every man does his share of governing by governing himself. *Power needs watching whether it calls itself democracy or autocracy.* But in the meantime, if we all interest ourselves in the homely matters of food, shelter and clothing—and fuel—we mustn't forget the fuel—it may not matter so much about the Peace Conference. About the best hope I have for it is that it will painlessly talk itself to death.

BERRIES THAT PLEASE *and* PAY

Here's a Chance to Go Farming

By JOHN T. BARTLETT

The Blackberry's fruiting habit.

AN organization of the British Columbia berry industry as pretentious as the Okanagan fruit-growers is in prospect. Delegates from Lower Mainland and Vancouver Island points held recently a preliminary meeting in Vancouver which appointed an investigational committee, represented on which are Burnaby, Mission-Hatzie, Chilliwack, Hammond, and other berry districts. Victoria sentiment favored a separate Island organization working in harmony with the Mainland association. Local co-operative associations have operated in the past, but a big growers' concern dominating the entire provincial berry industry is the aim.

The project is believed practical, as substantial sentiment is behind it. Some of British Columbia's most successful berry farmers are promoting the movement. The idea appeals to the business acumen of the Hammond Japanese berry growers, and Frank Kawashita, a leading farmer, is on the committee now at work.

Berry culture is successful in numerous communities of Southern British Columbia, but commercial development of the industry beyond local market needs is limited chiefly to the Kootenays, the district nearest prairie markets, to the Lower Mainland, and to a portion of Vancouver Island around Victoria. The Kootenays and Victoria are pre-eminently strawberry shippers. The Fraser Valley district of the Lower Mainland also grows many strawberries, but the leading berry is the "rasp," with production centred around Mission. All these districts have important jam-factory outlets. The Doukhobors of the Interior operate a large-scale jam-factory, while a number of similar concerns at the Coast are active purchasers. The Fraser Valley and Victoria district both ship carlots of berries over the mountains.

Respecting the two mentioned markets, which are additional to local domestic consumption, the growers feel the prairie demand is a permanent growing asset, while the jam demand, recently much stimulated by war conditions, may temporarily fall off somewhat in passing to a peace basis, yet will permanently function as consequential.

A novel piece of trade news last season was given out by a Vancouver wholesale firm. Acting as agents for Baltimore, U.S.A., buyers, this firm acquired for local cold storage fairly large quantities of local berries. They were held there until early winter, when they were shipped across the continent for consumption.

The berry industry enjoyed a most profitable year in 1918, and anticipates good returns in 1919. As in most other agricultural industries, fluctuations in production and selling conditions result in returns hardly two years alike. Some of the strongest growers always obtain a profit, while, just as in all industries and occupations, there are weak individuals who never make money. In the last-mentioned class there were mighty few B.C. berry growers in 1918.

Bearing on the possibilities in berry-growing, judged in a broad way, a statement recently prepared by K. W. Munson of Chilliwack is of real value. The basis of Mr. Munson's information is somewhat unique. On a partnership basis with the provincial government, A. Johnston established in April 1912, on 5½ acres on the Yale road, Chilliwack, a demonstration plot, the berries planted being two acres of Evergreen blackberries, one acre of Snyder blackberries, one acre of Cuthbert raspberries. In 1914, half an acre of Snyder blacks was rooted out, and loganberries substituted. This plot was taken over in 1918 by K. W. Munson, Chilliwack district fruit inspector, under a special arrangement with the Government.

One Red Raspberry's way.

Mr. Munson gives the business history of this small berry farm in succinct form.

In 1912, 1913, and 1914, returns were very small, as plants were just coming into bearing.

"In 1915," he says, "the crop was very satisfactory, but marketing conditions were very poor."

"In 1916," he says, "the last year the plot was under government supervision, the crop and prices received were very gratifying, and proved beyond a doubt that small fruits could be made to pay. In 1917, the crop was handled entirely by Mr. Johnston, with very fair results."

K. W. Munson rented the farm in 1918, on an arrangement with the Department of Agriculture whereby he could take time off for it, without pay. He took 22 such days. His wife, acting as superintendent of picking, was an efficient assistant.

What the Munsons jointly did with this rented farm forms indeed a bright page. An exact accounting for each variety of berry is given, with pertinent supplementary remarks. They had, of course, the good fortune of excellent markets, a very important thing. They gave the farm expert supervision, far better than novices could have done, yet hardly more efficient than should be expected of a berry specialist.

On two acres of Evergreen blackberries, yielding 820 crates, the gross receipts were $2,572, the expenses $1,248.85, a net gain of $1,323.15.

The Snyder blackberries, a half acre, brought in $145.06. It cost $146.33 to grow them, so there was an actual loss of $1.27.

"The Snyder blackberry," comments Mr. Munson, "is a decidedly unprofitable commercial berry."

On loganberries, a net profit of $100.74 on one-fourth acre was attained, the gross returns being $250.80, the expenses $150.06. Three-fourths of an acre of Cuthbert raspberries, the production of which Mr. Munson estimated was cut down 30 per cent. by an ice storm, the previous winter, gave gross receipts of $602.62, incurred a total expense of $411.17. The net gain was $191.45.

It will be gathered from the foregoing summaries that this berry farm returned exceptional profits. Details are equally valuable, inasmuch as they convey an excellent idea of the special costs which enter into small fruit production. Certainly profits are not made because such costs are small. The Ever-

Continued on page 33

Picking strawberries in the Lower Fraser Valley, B.C., with the sheltering hills near by.

On January 1st, a good article on apples appeared in FARMERS' MAGAZINE. That article dealt primarily with Ontario. This story of small fruits is laid in British Columbia, but the truths here told will hold for many parts of the East. Fruit articles following deal with Maritimes—Editor.

The productiveness of B.C. is seen in this new Experimental Farm at Terrace, B.C.

MUNICIPAL HOSPITALS *in the* WEST

By A. G. McDonald

INTEREST in the municipal movement has been growing throughout Western Canada, evidenced by the prominent place accorded to it at the annual convention of Saskatchewan rural municipalities which assembled this year at Saskatoon. In Alberta the movement is well under way. Not only did the principle receive the unanimous endorsation of the United Farmers of Alberta, as well as that of the Municipal Union, but the measure introduced by the Alberta Government carries with it some measure of compulsion, the Alberta act insisting upon validating by-laws being submitted to all the municipalities within defined areas, for the ratepayers' endorsation or disapproval.

The Saskatchewan act respecting hospitals was amended during the recent session of the legislature in several important particulars, although the main provisions of the original act are retained in the present measure. Such amendments as were introduced were either suggested by the light of experience during the past year, or as the result of recommendations made by the municipalities concerned. The old act stated that any two or more municipalities might co-operate in the establishment and maintenance of hospitals, a provision which made it possible for a small village and a rural municipality to undertake this burden. The amended act specifically states "that any two or more rural municipalities may co-operate with any number of urban municipalities," for such purpose, and is doubtless an improvement.

A good deal of uncertainty was entertained in many of the municipalities as to the procedure to be followed in submitting the proposal to their ratepayers. The amended act makes this very clear and specific. After the hospital committee (not the board to be ultimately appointed), consisting of one representative from each of the co-operating municipalities, has considered the matter thoroughly and drawn up a provisional agreement, setting forth the estimated cost of erecting and equipping a hospital to serve their ratepayers, together with the proportion which each municipality may be expected to assume, the proposal is then submitted to the councils of the municipalities concerned, and having been by them endorsed is forwarded to the local government board for approval.

When the local government board has signified its approval, the validating by-law and agreement receives the two readings necessary by the councils and is then submitted to the ratepayers entitled to vote on money by-laws. Wherever two rural muncipalities and one urban municipality shall, by the vote of a majority of their ratepayers, endorse such agreement, the validating by-law shall receive its final reading, be signed by the responsible officials and thenceforth become operative. It will be at this point, according to the amended act, that the hospital board will be appointed, and this also is an improvement upon the original measure. Previously the board was appointed before all this preliminary work had been attended to; and such procedure was considered to be working backward, as should the ratepayers vote adversely on the by-laws, there was no need for the board's continued existence.

The hospital board, having been appointed by the various councils, according to the provisions of the act, becomes a body corporate, and any property acquired for the union hospital shall be conveyed to and vested in the board for the uses and purposes thereof. The amended act sets forth very clearly the duties and responsibilities of this board, together with the method of appointment and tenure of office by its members.

As in the original measure, the amended act makes provision for a levy up to two mills on the dollar for hospital purposes. The average assessed value of one of the rural municipalities amounts to something over $2,750,000, so that a two mill rate based on this average assessment would realize at least $5,500 from each of the contributing municipalities.

The question is often raised as to what the probable cost would be for, say, four rural municipalities co-operating with an urban centre of some 500 population and an assessment of approximately $750,000. For such a community an institution would be required with at least twenty-five beds and roughly estimating each of the rural municipalities to have a population of one thousand people this would provide accommodation of one bed for every 180 inhabitants.

A 25-bed hospital, according to the most reliable estimates that have been procured, would cost to build and equip from $35,000 to $40,000. Assuming that it could be built and equipped for $35,000, raised by debentures extending over a period of thirty years, and bearing interest at the rate of 6 per cent. per annum, what would be the capital cost confronting the co-operating municipalities?

The amount to be provided each year under this proposal, would be:

For principal or sinking fund	$1,166.65
For interest	2,100.00
For depreciation	500.00
	$3,766.65

Which would be roughly divided as follows:

From each of the four rural municipalities	$ 941.65
From the urban municipality	295.00

The maintenance cost, whilst not so easily ascertained as the fixed or capital charges, might be estimated approximately as follows: From each of the rural municipalities there might probably be received from 60 to 70 patients per year, with an average stay in hospital of fourteen days per patient. The experience of the municipalities co-operating in the Kindersley movement is, that while fourteen days constitutes the average stay in hospital of their patients, from only one of the municipalities was there received anything like 60 patients, the average being nearer 40 and 50. Granting, however, that 70 such patients should be received from each municipality, with an average stay in hospital of fourteen days (this is really the average of all the hospitals operating in the province); and 980 hospital days would have to be provided for by each rural municipality.

The average cost per day, per patient, of all the hospitals in operation in Saskatchewan figures out at just $1.95. Should this be raised a trifle and the cost be estimated at $2, this would mean that $1,960 would have to be provided by each of the municipalities for maintenance charges, or a total of $2,901.65. As the Government makes a grant, however, of 50 cents per day, per patient, $485 or thereabouts would have to be deducted from this, leaving a total charge to each municipality of $2,461.65 for all purposes or considerably less than one mill on the dollar of the average assessable value throughout the rural municipalities.

Regarding the urban municipality co-operating in this movement, already referred to, 40 patients might be expected with a similar stay in hospital. This would involve an expenditure of $1,120 for maintenance charges which, together with the $295 towards the capital cost, would imply a total expenditure of $1,415, or a trifle under two mills on the valuation.

As an indication of the regard in which such institutions are held, wherever they have been established, it may be mentioned that at Lloydminster a new, modern, up-to-date hospital was recently opened. Increased accommodation was found necessary by the growing extent to which the people throughout the district were using the hospital. At Kindersley, where they have been occupying leased premises, a modern hospital is shortly to be erected at an approximate cost of $45,000 to $50,000. At both these places the country ratepayers are enthusiastic as to the benefits conferred upon their districts by free hospital accommodation.

FARM PRODUCE PRICES *By* S. T. Arthur

IN summarizing the produce markets of the day, two facts stand out clearly, 1st, that dairy products and eggs, etc., are holding up well in comparison with last year, and present a seasonable strength; and 2nd, that potatoes and other vegetables are weak in tone, with promise of still lower prices in the future.

The weather of the present winter has taken pattern after Germany, and relaxed its offensives, with the result that the fowl and dairy cows have responded gratefully. At the same time, marketing of potatoes, cabbages, etc., has been facilitated, and this fact, coupled with the further fact of a good crop last year, has resulted in a weakness that was not entirely expected in the fall.

On the street at Toronto stories are circulated as to the losses entailed by several produce men who undertook to store cabbages, with the result that several carloads of fine stuff went bad after being poorly handled. There has, strange to say, been no outcry over this—possibly because it was well guarded from the public press, or possibly because there is not the same concern over foodstuffs that there was a year ago.

At time of writing potatoes are being received on the Toronto market costing only $1.15 per bag in car lots. In direct contrast to this are the prices being received in New Brunswick for export potatoes, which run around $2.10 per bag there. Another contrast is provided by one Toronto dealer who claims to have turned down orders for several carloads of potatoes from United States buyers because he would not be able to secure Ontario potatoes of proper quality in car lots to take advantage of the $1.75 to $1.85 prices offered. Local Ontario markets show a narrow range of prices for potatoes for local consumption, and the reports range around $1.75 to $2, with some a shade higher and some a shade lower. At Montreal, Quebec, white potatoes are quoted at $1.40 to $1.50 per 90-pound bag

Cabbages, for the past few years a profitable crop for those who could produce in quantity, have this year been much lower. Toronto buyers are getting all they require at about $18 per ton, delivered, and there is no real keenness to buy at the present time.

Other vegetables are holding steady, without any material change in the situation from week to week, with carrots at 50c per bag, beets and parsnips 75c, and turnips 45c per bag, delivered at Toronto.

The bean crop is probably the hardest to market this year of any. There are still many beans of the 1917 crop in first hands, and if buyers could be found they would be gladly turned over. There is no doubt but that present quotations are materially below the cost of production. This is not a local condition, but is reported variously from all central marketing points in the East. Shelled beans are due for the discard in Ontario at least, unless things change materially, being unable to stand up before the competition of cheap foreign beans. With fewer beans being produced in Canada and more being imported, the adverse trade balance will have another hitch in its braces taken, and Sir Thomas White will have to devise new means of coping with the exchange situation.

Red clover seed, as predicted by the writer earlier in the season, and at a time when many of those in the trade were urging that the crop would be heavy, has turned out to be light, and prices are much higher than at the opening of the season. During the past several weeks the dealers have been forced to revise their quotations upward, and at present writing their general quotation at Toronto is around $18 to $25 per bushel—with a fair chance of still higher bids if the grower produced an extra fine sample.

Alsike clover has had a good season, but has lately been showing a tendency to ease off a bit; alfalfa brings out bids of from $18 to $23, according to quality; sweet clover has been off tone all season, and buyers are still trying to keep it below the $10 mark, with fair success. Timothy, which has been anticipating a ready export demand from across the Atlantic, has been bringing firm prices for good quality, with bids all the way from $4 to $6.50 per bushel.

War demand for hay from the U.S. was a strong prop under that market, and exceptionally firm prices have been paid all fall. Loose timothy on the street at Toronto has been scarce, and brought $27 to $29 per ton, with mixed and clover hay at $23 to $26. Baled hay has been bringing $21 to $22 per ton on the track at Toronto, with mixed at $19 to $20, with Montreal prices substantially the same.

Matters have been moving along seasonably in the dairy section of the market, with but minor readjustments in the dairy and creamery butter end. Creamery butter has been holding steady for some time at Toronto about 51½c per pound, but recently dairy butter eased off 1c, and is now quoted at 45 to 46c per pound for the best grades. The quality of dairy butter coming in shows improvement, as does the quality of cream for churning purposes, which retained its "feedy" flavors for some time after the herds were stabled for the winter. With the present strength in the butter market, Toronto creameries have been paying for several weeks a range of from 56 to 58c per pound of butterfat, according to quality.

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Should Farmers Be Dairy Manufacturers?

Is the Centralizer Coming to Canada?

By PROF. H. H. DEAN

THERE are three main phases of the dairy industry to be considered from a farmer's viewpoint—production, manufacturing and marketing. The advice generally given to the dairy farmer is, "You look after the producing end of the business and allow someone else to do the manufacturing and marketing." In the main, this is very good advice, but it pays the farmer to also consider the other two branches of the dairy business. This article will deal with some considerations which the man on the farm ought to concern himself about in connection with the making of finished products from his raw material, which may be milk or cream.

Raw Material Must be First-Class

WE are hearing a good deal in these modern times about "Grading." Everything, from wool to men, is being graded. In order to obtain the highest prices, a grade known as "Specials" is being placed on the cheese and butter markets. In order to have "special" on the brand, it is absolutely necessary to have the raw material of the very highest grade. At this point is where the farmer becomes interested. In the past, the man who produced the high-grade milk or cream received no better price for his goods than did the man who sold second, third or "off-grade" stuff. This was no encouragement for men to do better and take extra care. It is now recognized as a sound principle in the dairy business that if we are to improve the quality of our finished products, we must have better milk or cream; in order to obtain this improved quality from dairy farms those producing such must be paid an extra price, as this stimulates good work. There is some difference of opinion as to what difference should be made in price for the various grades, but I would suggest that where milk or cream is bought on a milk-fat basis, there should be a difference of at least five cents a pound fat in the various grades. This will encourage the man who is desirous of reaching the topmost round on the dairy ladder of fame. He will also have the tangible evidence that it pays to produce high-grade stuff, in the form of increased milk or cream cheques, which will enable him to buy or breed better cows, feed them better, build silos, have better stabling and all the other good things which go with good dairy farming. There is no greater need on the farms of Canada, than *financial encouragement.* All other things will be added, after the man on the farm sees ample reward for his labor, and "war-bond" interest on the capital invested in farm and livestock.

Where the first stage of quality production begins.

SOME farmers are so situated as to help and markets, that they can make butter, cheese, etc., at home. This is a nice line of dairying which should appeal to the young people on the farm who are skilful in making butter or fancy cheese. To do this successfully requires the temperament of an artist, as the making of fine butter is an art, and the rewards should be those which an artist has a right to expect.

However, the great bulk of milk and cream produced on Canadian farms and not used for direct consumption is manufactured in factories which are more or less co-operative in principle; or the raw material is sold to large concerns which purchase their raw material either direct from the producers or through agents who deal directly with farmers.

Theoretically, the ideal method is for farmers to own the factories which make the finished products; thus the farmer is both producer and manufacturer and has all the profits for both producing and manufacturing. While this is an ideal theory, in practice it does not work out so nicely. There are a number of successful farmers' co-operative factories in all parts of Canada, but the tendency appears to be for these concerns to pass into the hands of private individuals, or for the business to be merged into one of the large dairy concerns, which are getting a "sure grip" on the manufacturing part of Canadian dairying. My judgment is that the only way farmers can meet the competition of "Big Business," is for the smaller factories to federate so that they can hire a first-class manager, buy the supplies and sell finished products in car-lots, and do business in a business-like way. The small factory, whether owned co-operatively or privately, will have to do something to improve its financial standing, or be swallowed by the big fish. Every dairy farmer who is producing milk or cream to be manufactured into butter, cheese, condensed or powder milk, is, or should be, interested in this problem, which is now before dairymen, and will continue to be more to the front as time goes on.

Disadvantages of the Small Isolated Factory

THE small, isolated factory is out of the current of dairy thought and business to a large extent, hence it costs too much to make a pound of cheese or butter in such a factory and the majority of the patrons do not know whether or not they are paying too much or too little for manufacturing. They are usually at the mercy of the manufacturer or maker. There is usually no one looking after the leaks in the business and when it comes to selling the goods, they are frequently "fleeced" by the buyers. It is safe to say that there is no business in Canada, of the magnitude of the dairy business, which runs into the value of millions of dollars annually, where the business methods are so lax. The remedy, as we have already intimated, is to eliminate badly-managed factories and then federate the necessary ones by districts, so that those remaining may have the very best management under skilful men who knew the manufacturing and selling of dairy products from A to Z. If this is not done, the large organizations with unlimited capital are likely to swallow the small factories, which will not be in the best interests of dairying. We have to admit that there are some excellent features of the Big Business dairy corporations, such as a reduction of cost per pound for making, employment of skilful makers and the best machinery, and making a large quantity of goods of uniform quality, which the small factory finds it difficult, if not impossible, to compete with; yet there is always the danger of Monopoly by Big Business which means lower prices to producers and enhanced prices to consumers, as a rule. Of course, farmers have a remedy in their own hands, such as was taken by the Grain-Growers of Western Canada, who when they became the victims of Elevator Monopolies, erected their own elevators and went into the grain business on their own account. To do this with the grain business is comparatively easy, as grain does not spoil readily and no special skill is required to operate a grain elevator. In the dairy business, we are dealing with raw material that is highly perishable—products altogether different from wheat, oats, barley or any other marketable farm product. This is what makes it so difficult for farmers to successfully conduct a dairy manufacturing business. The average farmer has not the technical knowledge required to change milk into a highly-finished article like butter, cheese, condensed or powder milk and must rely on others for this knowledge.

The perishable nature of milk and cream also makes it difficult for the large dairy business concerns to turn out first-class material at all times, as the raw material has to be shipped or carried long distances. This fact has led these manufacturing organizations to adopt special methods such as neutralization of the acidity of cream, and pasteurization of cream, before making into butter; or the cooling of milk on the farm to low temperatures before delivering to the condenseries and milk-powder factories.

This too has caused considerable adverse criticism of what are known as "Centralizer Creameries," in which it is claimed that cream unfit for human consumption is manufactured into butter. The outcry, some of it probably actuated by selfish motives, against the United States Centralizers has become so insistent that special regulations are said to be forthcoming. The following appeared recently in an American dairy journal: "This week, it is expected, the Food Administration will announce rules under which the Centralized Creamery interests of the country will have to operate. The co-operative creameries are not to be included and can go on without any of the restrictions that will be imposed on the Centralizers."

The "Centralizer" form of creamery is being introduced into Canada very fast, and while the writer would be very sorry to do or say anything which would prevent an improvement in our Canadian creamery butter, because improvement is very much needed, we can see several dangers in this form of creamery. We should profit by the experience of our American creamerymen and if necessary, suitable regulations governing the Centralizer should be drawn up at once, to prevent abuses which are likely to occur. This is something which the newly formed National Dairy Council should investigate as soon as possible. We may mention one objectionable feature of the "Centralizer," namely what is known as the

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MILK RECORD FOR 30 DAYS ENDING March 31 1917

Name John Smith P.O. Dorville Prov. Ont

~~Record Centre~~ Testing Branch Black River

DESCRIPTION OF COWS.				COW No.	3 DAYS' WEIGHINGS OF MILK. DATES.				Total Pounds of MILK calculated.	FAT.	
NAME.	BREED.	Age.	Date of last Calf.			10	20	30		Per Cent.	Total Pounds.
Blossom	Grade Ayrshire	5	Feb. 10	1	a.m.	19	17½	16			
					p.m.	17	16	15			
Beauty	Grade Holstein	4	Feb 19	2	a.m.	17	14	16			
					p.m.	14	14	16			
White	Grade.	11	Mar 1	3	a.m.	13	14	12			
					p.m.	13	17	11			
				4	a.m.						
					p.m.						

Since the foregoing was written, I have read the preliminary report of the U.F.O. Committee, re farmers owning creameries and cheeseries, the same as has been done in Saskatchewan, and may say, that I am in sympathy with this movement. However, it is well to bear in mind some of the difficulties as outlined in the foregoing article. May I add, that I am somewhat surprised to note that the Committee would expect much support from the Dairymen's Associations of Ontario for a movement of this kind. These associations are owned Body and Soul, by interests which have not been very careful in the past to promote the welfare of dairy farmers, except for selfish purposes.—H.H.D.

LIVESTOCK *on* INDIAN RESERVES

By GEORGE K. MILLER

THE possession of livestock to the value of more than $4,000,000 is one of the assets of the Red Men of Canada. There are nearly 20,000 able-bodied adult Indians, and their herds net them an average of about $200 per capita. Twenty-five years ago, practically the sole occupation of the aborigines of the Dominion was to gather weekly for their issue of beef rations, raised by white men and contracted for by the Department of Indian Affairs through ranches adjacent to the reserves. Last year the beef sold and consumed as food on Indian reserves was valued by the agents at $307,680, and nearly all of this was produced and sold by Indians themselves. Out of an industrial population of 22,000, there are approximately 5,000 Indians engaged in the business of stock-raising.

The Cattle Industry

Figures supplied by the Indian Dept. at Ottawa, show these red men to be possessed of 38,000 head of cattle. Milch cows number 15,000 head, one-third of which are in British Columbia, and young stock runs slightly over 15,000. Of the total 28,953 head are west of the Great Lakes. British Columbia has 11,300; Saskatchewan ranks next with 7,756; Alberta has 6,570; and Manitoba, 3,321. Of the remaining 8,800, Ontario has 5,300, and Quebec and the Maritime Provinces, 3,500.

In British Columbia, Indians are realizing more and more the value of their hay meadows as a means of wintering cattle to advantage, and quite a number have made application for blocks of land for summer range. While the Okanagan reserve ranges some 2,500 head, and Kamloops 1,500 head, the bands are small and the cattle widely distributed. British Columbia Indians have laid an excellent foundation for an industry that will one day become great in their hands.

The cattle industry in Saskatchewan is one in which there are great opportunities for success, and on many of the reserves encouragement is given by the Department to enlarge the herds, which is resulting in much profit to the Indians. Saskatchewan reserves offer great areas of pasture lands, much of which is lying idle. There was a time when these Indians took very little interest in cattle, but they are realizing now the great worth of the industry. Losses among cattle are not nearly as great as in early years, due to better care of the animals in winter.

Exceptionally favorable grazing conditions in Alberta and the natural fondness of the Blackfeet tribe for stock-raising are responsible for the rather phenomenal success of this industry on their reserves. The Blackfoot owns 5,278 of the 6,750 head of cattle possessed by the various Indian tribes within the bounds of their province; and the Blood band of this tribe, whose reserve is situated between the south of Lethbridge City and Macleod, have 3,100 head. This herd is of the best types only, the bulls, some 70 in number, being Galloways and Shorthorns, and in recent years the purchases have been pedigreed Herefords from Ontario and Manitoba.

The Blood band has been exporting beef since 1907, and last year sold over 65 head of steers at $105 a head. The money received from this sale was immediately spent in the purchase of female breeding stock. The first large shipment from this reserve was in 1908 when 102 head, exported to Liverpool, sold for one-half cent a pound more than any other beef then on the market. In 1912 this band sold 195 steers at $75 a head.

Although they put up in the neighborhood of 4,000 tons of hay, Blood Indians have never needed to feed steers during the winter. Beef is always sold off the grass. In the report of the Deputy Superintendent General of Indian Affairs, Duncan J. Scott, he referred to this herd of Blood Indian cattle as "one of the finest range herds in the Northwest."

Manitoba is unable to boast of any very great success in cattle raising. It seems impossible to get Indians who have calves to utilize to the full the benefits to be derived from them. Calves are allowed to run with milch cows, and the use of one valuable product is lost for buttermaking and for the family use.

What threatened to be a serious condition in the livestock industry at Fairford has been checked. Tenets of the faith of the adherents of a certain denomination appealed to the instinct of the Indians, and they tried living by faith. They, however, found that faith without works is dead, and have gone back to their occupations and the caring of their stock. One Indian let 10 head of cattle die; another, two head, and the whole tribe of some 2,000 Indians were affected to a degree.

In Ontario, the Six Nations Indians lead the cattle industry, having some 1,700 head of stock. Last year these Indians bought three pedigreed bulls for the improvement of their herd. These were a Shorthorn, a Holstein and an Angus. The milking of cows has attained considerable headway, and milk is sold to factories adjacent to the reserve.

Quebec has approximately 1,800 head of cattle, 1,000 of which is milk stock. The Maritime Provinces have few Indians and consequently few cattle. The bulk of their herds are milk cows kept for the use of the Indian families for the milk.

The Horse Industry

While the Indians have made a great success of cattle raising in Canada, they have not neglected other livestock. Horses were dear to them before they ever saw beef steer. The aborigines hunted buffalo from the horse for many ages before range cattle were introduced on Western prairies, and next to the monarch of the plains, no animal has entered more vitally into the life of the Red Man than the horse.

But it is only within comparatively recent years that Indians have thought of the horse as a producer of wealth. To-day a large portion of their income is from the sale of surplus horses. In most agencies there has been great improvement in the class of horses used. The "cayuse" or Indian pony has practically died out, and with him has gone the travois. It is not uncommon now on Indian reserves to see as good horses as are to be found in any thrifty white settlement. For transportation of goods and travel some 7,000 wheeled vehicles, 1,800 of which are democrat wagons, are used.

Out of a total of 32,900 horses in use on Indian reserves in Canada, 28,243 are geldings and mares, 3,987 foals, and 644 stallions. Most of the stallions have been loaned by the Department of Indian Affairs under appropriate conditions, and this move has tended greatly to improve the quality of the reservation stock.

British Columbia has nearly half the total number of Indian owned horses in Canada, having 400 stallions, 10,750 geldings and mares, and 2,280 foals. Alberta is next with 90 stallions, 8,260 geldings and mares, and 900 foals. The Bloods have 35 of these stallions, 2,264 geldings and mares, and 300 foals. The Blackfoot, Peigans and Stonies all average 1,500 head each. Saskatchewan stands third with 3,847 head; Ontario has 3,522, and Manitoba 1,300.

Sheep, Hogs and Poultry

Sheep and pigs total 11,000, while poultry—turkeys, geese, ducks, chickens—runs to 92,000. More attention is given each succeeding year to the care of these smaller livestock and poultry, and to the milking of cows and buttermaking. Many young Indian women sell butter, eggs, etc., in towns where they do their trading. Agents are giving more encouragement to these activities of their wards, and great strides will be made in the next few years.

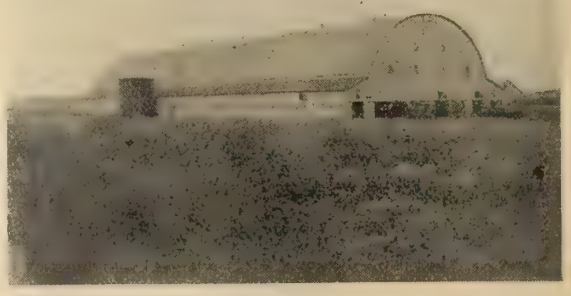
The splendid advance made by the Indians in agriculture has had a tendency to lessen their interest in stock-raising. The warning to white farmers, issued by the Dominion Department of Agriculture, against the fallacy of neglecting livestock to garner grain exclusively, might well be sounded forth by Indian agents to their industrially inclined wards. Canada's farmers have heavily liquidated their breeding animals, and as a result there will be a marked shortage in every branch of the livestock industry. It would seem to be a time when the Indians with their broad reserve pastures and natural aptitude for the work of ranging livestock, might well put forth the additional effort that must be made to provide for the impending deficit. There is no doubt that the marked demonstration of patriotism on the part of the Red Men in other directions will have the effect of increasing their desire to produce all they can from the lands which they control. And this will mean an increase in their production of livestock.

GOOD FUTURE FOR CATTLE

By GEORGE E. DAY

THE breeder of good beef cattle has every reason to view the future with confidence. The high prices for feed which have prevailed for several years in both the United States and Canada have tended to keep stocks of cattle in these countries rather below normal, or, at any rate, have prevented the extension of cattle breeding, which might otherwise have been expected under the high prices prevailing for beef. On the other hand, we know what has happened in many parts of Europe where the war has nearly stripped several European countries of their cattle. Conditions such as these are bound to reflect themselves in the demand for stock to fill the place once occupied by these wasted herds. There seems to be only one possibility, and that is a strong demand for cattle, especially beef cattle, for years to come, until conditions become normal once more.

A general purpose team on J. D. Remmer's apple farm, Pickering, Ont., that are rated at five horsepower on the draw bar pull. The flat wagon is a mighty handy rig around a farm.



This barn at Leader, Sask., is said to be next to the largest in the world. It is 128 feet wide, 400 feet long, and 62 feet high. It required 875,000 board feet of lumber; 30,000 sacks of cement for foundation and floors; 60,434 sq. feet of corrugated, galvanized iron roofing, and 3 tons of nails and other hardware.

It is true that we may see some abnormal developments. Many people are inclined to become filled with panic when any great change takes place, and it is just possible that there may be some reckless unloading of cattle which may overtax the absorptive powers of the market. Under such conditions reactions are bound to take place, but such a condition of affairs can be, at the worst, only temporary, and the bareness of the market is bound to make itself felt in the way of enchanced values sooner or later. It would seem that there is really no need for panic or lack of confidence, and if breeders and feeders of cattle will pursue their way as if nothing unusual had happened, there will be no glutted market, and no undue depression of prices. The cattle men themselves have matters in their own hands, and those who keep their heads will be in a position to profit by the strong demand for cattle, which is bound to exist for some time to come.

The cattle breeders of Great Britain evidently have confidence in the future. The prices obtained at the great sales of Shorthorns in Scotland have exceeded all records, which is the best of evidence that the British breeder has confidence in the future. As stated before, confidence is the main thing required at this time, and it is to be hoped that Canadians will not show themselves lacking in this respect at this particular time, for, so far as conditions can be judged, the outlook for good cattle never was brighter than at the present time.

A WOMAN *Gifted for* COUNTRY LIFE

By ETHEL M. CHAPMAN

A WOMAN who knows the town and the country and who likes the country best, who is a practical day-in-and-day-out farm homemaker, accomplished alike in music, cooking, children and chickens, who can still find time to give to any cause for the community betterment, and is withal a charming, inspiring woman to meet—she is a woman to be listened to. Strongly as she argues that she is doing just what thousands of other farm women are doing, we feel that her creed is worth spreading.

Mrs. Jas. Patterson of Perth County, Ontario, spent her girlhood in the city. She was a music-teacher and when she came to the farm, a bride, she stepped into a different world. "I had visited on the farm and had music pupils in farm homes," she said, "and I always knew that I loved the country. I didn't know anything about the amount of hard work to be done by someone if the pleasant aspect of farm life was to be kept up. Two things, however, drew me to the country:

"I descended from the Pennsylvania Dutch and I had inherited the Dutch housekeeper's love of plenty—the looking well to the ways of her household. After my father's death we had taken up the light-housekeeping custom in the city and something in me fretted at the "hand-to-mouth" way of living. Even as a girl I had always had the ambition to have things in my home rather than clothes and things for myself, and I could see possibilities of making a home in the country such as I could never have in town. The Pennsylvania Dutch are also not afraid to try things. I knew that I knew nothing about farming but I believed I could learn.

"The other, bigger thing about the country which appealed to me was its simple, clean standards of living. I was pretty young when I left the city, but I was not too young or inexperienced to see a lot of duplicity in its social life and it rather frightened me. I wanted to get away from it. The simpler life of the farm seemed to promise something safe and wholesome....It is only since I came to the country though that I have begun to see the actual possibilities of country life. The greatest thing we need is more large-minded people to develop them. Talk about an education being unnecessary for the boy or girl who stays on the farm. You never know how you need an education till you get on the farm. The country wants women who can do more than cook and sew and feed chickens, women with a vision and a training to help them realize their ideals. If you have that you can make a world out of a hundred acres."

Perhaps another thing that has helped her to make so much of farm life is her happy attitude to the things around her. She is one of the rare women born for the country. A mother hen never clucks her brood up to the doorstep that she doesn't throw out some crumbs to them; if she has time she would rather go out and let the chickens hop into her lap and hunt the crumbs from her apron. This is one of the diversions from her day's work, one of the ways she has of resting. It also rests her to go out and milk. Possibly her early years of piano practice helped to develop strong wrists—anyway she gets a good stool, settles down comfortably to her work and it doesn't tire her. And she says, "I would no more think of tying up one of those cows and leaving her without giving her a pat, than I would think of leaving a baby without petting it." So the amazing amount of work she accomplishes in her home and in the community doesn't wear her out physically nor fray her nerve edges.

The bride who knew nothing about farming—and fifteen years later.

Mrs. Patterson has all the Dutch housewife's thrift and love of plenty, all her respect for proved, scientific methods. Her cellar cupboards would more than satisfy Solomon's demands of a provident woman with their crocks of apple butter and shelves of canned fruit and vegetables and meat—all done by the latest approved cold-pack method and of a quality that has won a reputation. Before the canning fever swept the country a year and a half ago she was telling the Women's Institutes in her district how to put up from the winter killing enough fresh meat to last all summer. She didn't know how to do this when she came to the farm but she is a student of housekeeping as she is of other things and there is nothing that she is afraid to try.

She was the first person in the neighborhood to experiment with an incubator. On the evening when the first hatch was to come off the neighbors came from far and near to see the chickens come out, and they held the lamp close to the door and watched the animated bits of fluff on their tooth-pick legs peck their staggering way into the world. It was a miracle! And I doubt not the process seemed a little more wonderful because the woman who helped it along saw in it something more than a physical result of warmth and moisture. Anyway the next week an incubator agent came through the neighborhood and sold a machine at almost every house. It wasn't the same make of machine at all, but his strong selling argument was "Perhaps you saw Mrs. Patterson's."

One of the hard things she had to learn to do was to make soap and get it just right. "I was ten years," she said, "before I could be sure of the soap coming out exactly right in the first boiling. I found a great many women who had been making soap longer than that who were never sure of the result. *I could not go on guessing; I had to make experiments for myself.* Now I know that if I take twenty-five pounds of grease or scraps to five pounds of lye (preferably to bulk potash) and boil four hours with eight quarts of water it can't be anything else but right. When it is done I put in a gallon of salt and the soap comes off on top.

"The trouble with many of us in trying a new thing is that we rush into it before we thoroughly understand what is required and when we fail we blame the method rather than our own way of using it. One fall I had a lot of geese to pick and any woman who has done it knows that it is almost an all-day job to dry-pluck a goose. While I was at it one afternoon a man called and told me that he thought he had seen his wife scald her geese and wrap them in a cloth for a while before picking them. I was pretty tired of picking geese so I put on the boiler and tried it. I found that by giving a goose one plunge into boiling water, wrapping it in a cloth and leaving it for fifteen minutes, the steam would loosen the feathers but the water wouldn't touch the skin at all. One day on the market I told some women about this. The next Saturday one of them came and told me she had tried it. I asked her how it worked and she said: 'Come and see.' I was amazed to find that not only the feathers had come off but the skin had come with them. And the woman said: 'Didn't you say to plunge the goose into boiling water and leave it for fifteen minutes?'"

MRS. Patterson is an enthusiastic convert to the doctrine of the out-door life for women. "When we came to the farm," she said, "with wheat at sixty-five cents a bushel and oats at seventeen cents, it took some hoeing and scratching to pay even the interest at six per cent. on a mortgage of four thousand dollars. With butter at fifteen cents a pound you had to churn some to pay for even a twenty-five dollar cow. We hear it said now that the farmer is making money. If he is making money he is making it by sheer saving, not by good luck; his good luck lies in his ability to manage. If the family on the farm were where they could attend shows and horse-races regularly they couldn't save money.

"But don't pity the woman with the hoe. In a field where there are others to laugh and talk with she enjoys it as much as her city cousin enjoys wielding the golf-stick. On our farm we plant the garden in long rows and let a horse do the scuffling. The men

Continued on page 26

Some of the staff of Women's Institute lecturers. Do you recognize the frail little bride above in the woman fourth from the right in the second row?

FARMERS' MAGAZINE

Canada's National Farm Magazine

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA.

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UP AND AT IT

NOW that peace is coming, all farmers can again devote their energies to improvement of their farmsteads, their fields and their living conveniences. Trees must be planted this spring. Paint must be used. Plans for fencing, building, shingling and fertilizing should be studied carefully in order to do the jobs in the best and cheapest way.

THE OXFORD SURVEY

EVERY farmer who wants to make his own business go, should pay particular attention to the report of Prof. Leitch, of the Ontario Government Agricultural College, as summarized in this issue.

In the farmers' surveys of Caledon and Dundas, conditions were somewhat different. In Oxford, which is a leading dairy county and one where farmers generally are supposed to be well off, it was expected that returns would in some measure upset the conclusions reached in the other surveys. On the contrary, the leading facts disclosed lend emphasis to the chief points made in Caledon. The principal fact that ought to be established in the minds of those urban people who are always calling farmers profiteers, is that the returns in the business are only made as the farmers' families apply themselves to business and this road to affluence is open to all who want to travel. Out then, ye city-man who thinks that dollars grow on fence rails, to the task and become an heir of all these wonderful profits. Or be sensible, pay the price for your produce and shut up.

FARM SERVICE STATIONS

BUSINESS concerns to-day are constantly talking service in their advertisements. They feature this as one reason for your investment in their output. So much trading is done under the name of service that one is liable to find this good old word somewhat overworked. We all know what the word servant means. The farmer looks kindly on the old horse who has been a good servant to him for years. The housewife talks about the efficiency of her servants and oftentimes the word servant has become distasteful to us. Under its new name of service, the idea has been almost idolized. And this feature of the business world is indeed a worthy one, for nothing seems to be justified now except it contribute to the needs of another.

Just so with agricultural papers. They grow as they serve. Only so far as a paper becomes a servant to its readers does it really live. Often a journal may serve a mere fraction of its readers, but the time comes when the unserved will slough off.

It is gratifying then to the editors and publishers of FARMERS' MAGAZINE to know the way the farmers of Canada are recognizing in it a journal of real service to them, one which spares no reasonable expense to give its readers help of a very substantial kind. A glance over this issue will show what many readers have written concerning previous issues,—the wide extent of its usefulness. This satisfaction to our friends and their encouragement has braced us to still further improvements in FARMERS' MAGAZINE.

During the current year, we are adding a special livestock service that is going to mean much to every livestock man in Canada.

Mechanical ideas are needed in so many cases that our special articles dealing with tractors, autos, engines, machines, lighting devices, water services and implements, by well qualified men whom we pay well to give of their best to our readers, will prove very helpful.

Education of our farm children is a mighty important thing. Our social life is important. For on these things in a large measure depends our happiness and its maintenance of our farm values. The magazine covers these in a way that few farm papers in the world can equal.

Farm organization are good. We back the whole movement. We want everything for agriculture that agriculture deems wise. The FARMERS' MAGAZINE has no axe to grind, no camouflage to put up. It is owned by Col. J. B. MacLean, whose Publishing Co. is the biggest of its kind in the British Empire, and that fact alone ought to ensure a service of which anyone can be proud. Every two weeks an issue goes to your farm house. Thus you have twenty-four service stations in your farm work—two a month, and you will enjoy them the more as you use them. Each FARMERS' MAGAZINE is a free service farm station to you—use it. Each department awaits your wants.

BANK STATEMENTS

DO farmers ever read bank statements? Assuredly it would be a good thing if generally all farmers would examine bank statements and be in a position to discuss the bank's position intelligently. All of us have heard criticisms made against the banks, especially banks in our small towns and villages where the deposits were large and the loans were few. Also farmers have declaimed against the banks for their lack of credit consideration to them. And doubtless there have been occasions when there was some justice for the criticism, but there is another side also that ought to be shown up. The banks generally have been giving service to farmers that is appreciated, and where some farmers or farmer's clubs have experienced any difficulty, it has been due either to the applicant's personal habits or to a bank manager whose business ability was distinctly below par. A glance at the Union Bank report in this issue shows that the current loans have increased considerably and that is the best indication of the service the bank is putting up.

Farmers should patronize the banks that are helping agriculture and developing farm trade.

ONTARIO CHEESEMAKERS LIMITED

A DELEGATION representing the cheese manufacturers of Ontario early this month visited the Saskatchewan Cheesemakers to investigate the possibilities of a co-operative amalgamation of cheese manufacture. Saskatchewan, in line with all their co-operative big farm business deals, has grouped their creameries under one company and their year's report of operations shows some very encouraging features. At one time last spring they were making $10,000 to $12,000 worth of butter per day. They erected a cold storage warehouses at Saskatoon at a cost of $80,000 and thus relieved themselves from the necessity of forcing all this butter on to the market at once. Consequently there was no particular glut with its consequent fall in price.

Now if several of the cheese factories in Ontario could unite to form a Co-operative Cheese Company, so much good would result in better sales and lower operating costs. The whole question has been discussed at both the Eastern and Western Dairymen's Associations, and generally the reception to the idea has been favorable. As Prof. Dean says in his article in this issue, there are big difficulties in the way which will likely show themselves more plainly as the thing develops.

Every farmer stands to gain by such a move, when he will come into a position to be able to better control his own product, to have it made uniform, weighed accurately and packed well in his own central warehouses. Private manufacturers and interested middlemen will object to the scheme. That fact ought to unite the producers.

EDITORIAL NOTES

CAMOUFLAGE don't pay.

HOGS have dropped one flight.

AND the first council meeting passed safely.

KEEP sweet tempered, though the lane is long.

GOOD roads must come. Statute labor has failed.

OXFORD Surveys by Prof. Leitch reveal some things.

DAIRYMEN are getting a new idea of co-operative mergers.

OUR whole energies should now be centred on better farm conditions.

ORDERS-in-Council are falling into disrepute. They should get the flu.

EVERY farmer should discuss public questions intelligently and be fair to all.

GET into your farm club. You will be safer all-round to stay with your farm organization.

READ the practical articles in this issue. You are going to get a great deal of help from them.

WHO ever dreamed that we would have to depend on any man or set of men for our trial by jury?

OF COURSE, horses are not going to go from our farms. We have need for horses and tractors too.

MORE practical good is done by the Experimental Union and the dairy and livestock conventions than is done by the artful dodgers of politics.

TO patch up the Orders-in-Council is an insult in this time of peace. The only thing to do is to get back to Government by the people as soon as possible. Let there be no more prosecutions about free speech and free reading.

WHEN starting out to found a livestock herd it always pays to buy good seed stock. It is poor economy to save a hundred dollars and spoil the calf line next year. Canada ought to be building up a reputation for pure-bred stock second to none.

THE Union Government, it is rumored, is working on a new Franchise Act. If it brings out anything resembling the War Time Elections Act, it will get its death-blow from the farmers. They are not in a humor to tolerate any more election dodges. They outlined their ideas of the ballot at their recent convention.

FARM EPIGRAMS

From the Ninth Concession

WELL we hope they will get through the Peace Conference without war.

WHO is Rosa Luxembourg? She is the lady who put the "she" in Bolshevism.

MANY of our soldiers died without sons, but their heroism will inspire the sons of all men.

THERE are men who can tell you the exact cost of the war and yet can't tell whether their hens are paying for their feed.

THERE are people who think that food comes natural like air and water, but those pesky farmers get hold of it first and charge big prices for it.

IT IS beginning to look as if the red tape entanglements of peace would be just about as troublesome as the barbed wire entanglements of war.

FROM Berlin to Bagdad was the slogan of the Hohenzollerns. Their new slogan seems to be: "From Potsdam to Perdition."

THE Kaiser was the first to raise the cry about "The Yellow Peril." Judging by the yellow streak he has developed he turned out to be something of a Yellow Peril himself.

WHITMAN speaks of the "insolence of elected persons." Wonder what he would have said if he had turned his attention to appointed persons?

Behold the voter and his vote.
The party boss has got his goat!
A goat at least can bah and butt,
But he just votes—the silly mutt.

SENSIBLE CARE *of the* TRACTOR

By ARNOLD P. YERKES

THE lack of proper attention and care given to farm machinery has long been a subject for comment. While farm tractors, because of their greater value, do receive more attention at the hands of their owners than most other farm machinery, nevertheless it is exceptional to find a tractor that is being given the kind of care to which the manufacturer and tractor dealer consider it is justly entitled.

A great deal has been said and written regarding the abuse of farm machinery, including tractors, through standing out of doors. The actual damage caused by such exposure, great as it is, is insignificant compared with that which is constantly occurring to farm machines, especially tractors, through lack of lubrication and general neglect at the hands of operators. Lack of oil and grease is responsible for more repair bills and total ruin of machines than any other one cause. Tractor lubrication is so important a subject that it will be treated separately in a later article. In this article we will deal with other features of general neglect to which many tractors are subjected.

Overheating Troubles

ONE very fruitful cause of engine trouble is overheating through lack of water in the cooling system. There would seem to be no excuse other than laziness or carelessness for allowing a tractor engine to operate without a plentiful supply of cooling water. While the mere fact that the water is boiling will not cause damage to the engine so long as it is not allowed to get too low, nevertheless when an engine is being operated with the water boiling, evaporation is rapid and there is constant danger of it getting so low that parts of the metal around the cylinder are not properly cooled and damage will result. The cooling system should be kept nearly full of water all the time the engine is working. Some means should be provided for carrying an ample supply to the field, so as to avoid the temptation to keep on operating the outfit after the water has become low, simply because no supply is convenient.

Another example of carelessness or laziness is the use in the cooling system of water containing a considerable quantity of dirt or trash which clogs the radiator or other small passages in the cooling system and so causes constant boiling of the water and consequent overheating of the engines.

Still another very fruitful cause of delays and repairs with tractors is that of allowing the water in the cooling system to freeze during cold weather. This obviously can be laid only to neglect at the hands of the person responsible for the care of the machine. Every winter there are hundred of cases where this has been allowed to occur, with the result that the walls of the cylinder are cracked, the radiator burst, or other parts damaged.

Whenever a tractor is to stand idle in the winter the cooling system should be completely drained. The operator should assure himself that he knows the location of every petcock which is used to drain the system, as on some machines it may be necessary to open two or three petcocks to completely drain it.

Even though the engine is to stand only a few hours in cold weather it is necessary to take this precaution or else cover the radiator carefully with blankets or something similar in order to prevent the cold air coming in contact with the radiator pipes. Many people have been greatly surprised to find that a radiator will freeze within a short time after the engine has been in use and the water raised to a high temperature. The reason is plain, A RADIATOR is designed especially to cool the water which passes through it by having the water pass through small tubes or passages with very thin walls with which the air comes in contact. As soon as the engine is stopped, the water in these passages cools very rapidly and it is not at all uncommon in cold weather for this water to freeze while that which is in the water jacket of the engine itself may be still quite warm. What happens may be compared with setting a bucket of warm water out of doors on a cold day. If a little of the water is spilled this will cool and freeze long before the temperature of the larger body of water in the bucket has been reduced to anywhere near the freezing point. In the same manner the small threads of water in the radiator quickly cool and freeze while the larger amounts of water in the engine castings or circulating pipes cool much more slowly. This is particularly true on many engines where a pump is used to circulate the water, since as soon as the engine is stopped the pump tends to prevent the circulation which would continue to take place if the passages were free, as in a thermo-syphon cooling system where the water will continue circulating to some extent for quite a long time after the engine has been stopped. Obviously, the more efficient the radiator, the greater the danger in this respect.

Plowing as straight a furrow as ever horses made across a 40-rod field.

Go Over the Machine Daily

THE vibration of a tractor in operation tends to loosen bolts, nuts, wiring connections, etc. Operating a machine when certain bolts are loose will frequently cause breakage or excessive wear, and wiring connections which may be jarred loose through vibration often cause serious delays until the trouble can be located. The machine should be gone over frequently (at least once a day) to see that all nuts and bolts are kept tight. It is a good plan to make a practice of wiping the dust and grease from the different parts of the machine while making such an inspection. It is not only more pleasant to work and care for a reasonably clean machine but is also a much easier matter to locate troubles where the various parts are kept free from dust and dirt.

Any competent operator who has handled a machine for a short time when it is working properly soon learns to know the sounds of each part and any unusual noises from any of the parts will be noticed at once. Nearly always unusual sounds about a tractor are a warning of trouble and they should be located and remedied at once. This is particularly true of the engine bearings. These parts are working under enormous pressures and when they become sufficiently worn or loose through lack of lubrication, ordinary wear or loosening of nuts, etc., it is highly important that they should be put in proper shape immediately, since running the machine only a few hours while the bearings are loose may result in a breakage which will wreck the engine and cause expensive repairs.

IT is impossible in an article of this kind to give detailed instructions for the proper care of each and every machine because of the considerable differences in construction. Nearly every tractor manufacturer, however, furnishes an instruction book which contains necessary information for the proper care of his product and the best advice that can be given is to carefully read every word of the literature furnished by the manufacturer and save it for reference. This literature should not simply be read through once and laid aside, it should be gone over several different times as the operator becomes more familiar with his machine, as in this way he will probably understand some parts of the instructions which will not be clear at the first reading.

One piece of advice which will apply to all tractors, however, is to avoid overloading. There is always a temptation on the part of an operator to load a tractor to its limit, especially at busy seasons of the year when the work is urgent. This practice is usually a case of "the more haste, the less speed," as overloading is almost sure in the long run to result in less work being accomplished and unnecessary delays and expenses through breakdowns. Overloading a tractor is even worse than overloading a horse, as the abnormal pressures and strains on the various parts of the machine are almost sure to result in excessive wear or breakage. A tractor when overloaded does not accomplish as much work in proportion to the size of the implement pulled as when working under its normal load, because when unloaded there is a great deal more slippage of the wheels which reduces the speed at which the machine travels and the speed of the engine itself will usually be reduced somewhat, which, of course, results in a slower speed of the outfit. Delays due to trouble with the machine, stoppages on grades, etc., are also more frequent. Where it is especially urgent that a given piece of work be expedited, it will usually pay best to work

One type of tractor used in the corn belt on soft ground. It is controlled by iron rods from the driver's seat on the implement.

the tractor longer hours with its normal load than to add an extra plow, harrow, etc., to increase the amount of work done in a given time.

Use of the Clutch

ONE very common form of abuse of tractors is through the improper use of the clutch. The purpose of the clutch on the tractor is to allow the engine to engage its load gradually in order to avoid excessive pressures on the gears, bearings, and other parts. The clutch should, therefore, be kept in such condition that it will engage smoothly without jerking. Care should be exercised in operating the clutch to avoid engaging it too suddenly, as it is possible even when a clutch is in first-class condition to let it in with a jerk, which may result in breaking some part of the transmission. The clutch should always be engaged slowly, so as to cause a small amount of friction at first, just enough to start the tractor and its load, then when it is under way it should be fully engaged, after which there should be no slipping whatever. The clutch is designed to withstand a certain amount of slipping such as is necessary to start the tractor without damage. The transmission, however, is not built to withstand the terrific blows which can be inflicted upon it by allowing the clutch to engage too suddenly or by backing up the tractor to gain momentum in order to start the load. When either of these practices are regularly necessary to start, it is evidence that the load is more than the tractor should be required to pull. The subject of overloading will be treated in a later article. The care and adjustment which a clutch should receive vary with the different types, and instructions are usually furnished with each machine.

WHENEVER a tractor is to stand idle for some time, it should be stored in a dry place and the water drained from the cooling system. If it is impossible to place a tractor under proper shelter, it should at least be covered with a tarpaulin or some other waterproof cover.

In order to prevent rust forming on the polished working parts, all grease cups should be turned down so as to have such parts covered with grease to exclude the air. If the machine is fitted with a mechanical oiler, a plentiful supply of fresh oil should be pumped, by means of the hand crank, to all parts reached by the oiling system. The lubricator should then be completely filled with oil to prevent the polished mechanism of the oil pump from rusting.

It should be kept in mind at all times that the tractor is one of the most expensive and at the same time one of the most important farm machines, the proper care of which will pay handsomely in increased work and satisfaction, while neglect will inevitably result in increased expense for repairs, etc., as well as loss due to delaying farm operations. Treat the tractor right and it will make money for you; abuse it and it will make you pay for it.

Old Gus and Little Jim

By ARK

THERE *used to be some folks what dwelt upon a farm near us, and the head of that there family was known as Old Gus. He never rose so very high, his funds was pretty low, it seemed as though he'd always had a sort of barren row.*

He only had one little boy, but he set a pile by him, and everywhere Old Gus would go you'd find there little Jim. You'd see him settin' with his dad when he drove off to town, and Old Gus used to laugh and call in helpin' him get down.

But then there come a time one year when lots of kids took sick—well Old Gus stuck to little Jim, he stayed there like a brick.

And little Jim would wander like and call and make a fuss, it pretty well nigh broke the heart of our old neighbor Gus.

And the doctor come one night to see Old Gus's little Jim, and after soundin' him a while—he growed so pale and thin—he took Old Gus aside a bit, and then he told 'is dad, there weren't one chance in twenty for that there little lad. "If he hangs on till mornin', Gus, he's got a chance to fight—you'll know the best or worst, old man, before night comes to light."

And all night through, Old Gus he stayed and prayed for little Jim, "Oh God, I don't want nothin' else, but only leave me him—or if y'er goin' to take my Jim up there to be by You, why can't you make it happen for to let me go 'long too?"

And just as night was bustlin' up and turnin' into day, Old Gus he turned to little Jim, he couldn't stay away. He took that little hand in his, he wasn't tossin' now, and Gus he passed his tremblin' hand across that little brow. And little Jim looked up at him with a smile that God might send—the fever passed away that night and Jim began to mend.

And I can mind how Old Gus come a-rappin' at our door—why it wasn't more than dawnin', just long 'tween three and four. The tears was streamin' down his face, but shinin' from his eye, was beams and thanks and joy all mixed, just like a summer sky. And all Old Gus could do was cry and send up thanks to Him who heard his cry and answered it, and spared his little Jim.

A Central Warehouse *for* Cheese

By S. T. ARTHUR

ONE man pre-eminently in touch with the national aspect of Canada's dairying, and of recent years still more closely in touch with the export side of it, is Dairy Commissioner Ruddick, of Ottawa. Serving on the Dairy Produce Commission, Mr. Ruddick has had additional opportunity to scan the industry and weigh and balance its progress and possibilities.

He estimated the total value of dairy products in Canada as over $200,000,000, of which 25 per cent. has been exported. Mr. Ruddick attributed the decline in the amount of cheese exported from Canada to the unfavorable weather, and not the unfavorable price. He brought out a peculiar fact in connection with the price, when he said that while butter was comparatively less profitable, still more butter had been made last year, and less cheese. The answer undoubtedly lay in the fact that dairymen placed a higher value upon skim milk for feeding young animals, and so preferred to sell their cream.

Without knowing anything of what would be done, he imagined that the British authorities would continue to buy dairy products in Canada through some sort of a Commission so long as rationing and food control continued over there. But even so, he urged that the British Ministry was not anxious to impose minimum prices on the Canadian dairy industry, as that would mean reduced production, and defeat their end. Evidence of this, Mr. Ruddick found in the fact that "they increased the price of cheese last year from 23 to 25c per pound, one might almost say *without the increase having been asked for.*"

The marketing of Canada's export butter and cheese on a quality basis had been so satisfactory that Mr. Ruddick urged the carrying out of a plan he had cherished for long. The plan would be to ship all cheese and butter regularly to warehouses at Montreal where it would be graded by a Government grader and offered for sale by auction to the highest bidder, according to the quality of the lot.

The chief advantage would lie, he believed, in the reduction of the cost of marketing, and add to the amount received by the producer for the article. Salesmen, country buyers and cheese-boards would all be eliminated.

To the industry at large would return the benefit of placing dairy products on a quality basis, which would result in improved quality in the make. This had been the result in Quebec, where all cheese had been graded for two years, and this year 8 per cent. more qualified for grade 1 than was the case last year.

Two methods were open to put his plan across, 1st, the formation of a co-operative concern to handle it, and 2nd, to have a private firm or company undertake the auction business at a fixed rate.

The suggestion thrown out was urged upon the Eastern Dairymen for adoption, as being something that might well claim their attention and energies, since so much of their original work has been removed by the dairy schools and instructors.

FARMERS' MAGAZINE APPRECIATED

ECHO BAY, ONT.

Enclosed find two dollars in payment for subscription of FARMERS' MAGAZINE *for two years.*

I have been a subscriber to this valuable paper for several years and now feel that I would not like to be without it in my home, inasmuch that it contains reading matter for the whole family. The valuable ideas in the magazine are well worth the subscription price.

J. E. JOHNSON.

NORTH KEMPTVILLE, YAR. CO., N.S.

I have certainly received a great deal of information from your magazine and have been greatly delighted in the continued stories. It is the best magazine of its kind published.

MELFORD PRIME.

WANTED ONE HUNDRED FARMER EDITORS

FARMERS' MAGAZINE want its readers to help edit this publication. Many farmers carry on successful experiments each year and the results of these should be written up and published in the farm papers.

If you have a good idea or have been successful in overcoming some difficulty, pass this on to your neighbors and farmers all over Canada by sending it to FARMERS' MAGAZINE for publication.

You read of experiments carried on by other farmers and difficulties solved—why not let others benefit from your own ideas?

You don't need to be afraid of sending in your notes in rather rough style, the editor will put everything in shape for publication. Send photographs, if you have any available, illustrating your work or your ideas.

FARMERS' MAGAZINE will pay for all articles contributed, either in cash or by extending the subscription of the contributor.

Some suggested subjects on which we want articles and photographs are as follows:

POULTRY
LIVE STOCK
BUSINESS OF FARMING
THE DAIRY
FRUIT GROWING
PRACTICAL FIELD METHODS
TIMELY WORK FOR EACH MONTH
HORTICULTURE AND GARDENING
FARM ENGINEERING
SAVINGS AROUND THE FARM
FEEDING RESULTS, ETC.

FARM PROFITEERING EXPLODED

Oxford Survey Reveals Things

By S. T. ARTHUR

THAT there are good farmers, working thirteen hours a day for six months in the year who make less than nothing on their year's operations, and that the average farmer at the end of the year has, to show for his work and that of his wife and the younger children, a little less than $1,200 does not jibe with the urban idea of farming at this time.

But that this is the actual fact is brought out by the financial survey made in the past year in Oxford county, covering the farm operations for the twelve months preceding April, 1918. Prof. A. Leitch of the O. A. C. has placed a statement on the results of the investigation before the Dairymen's Associations of Eastern and Western Ontario.

He has further shown that, taking the average of Oxford county, there is but a very very small margin between the cost of milk and the money received for it. Approaching it from various angles a number of peculiar facts have been brought out—facts that are not based on theory, but which come directly from the actual figures of work done by Oxford county farmers in the normal way.

For instance, where men receive all their income from dairying, they are making less money than they would if they diversified their operations a little more; where dairymen are improving the quality of their cattle by feeding and breeding, they are making more money than where they are improving the quality of their grain crops which are to be fed to the cattle; where men buy liberally of even expensive feeds better returns are received than where the purchase of cattle feeds is restricted; that farmers who cleared up the waste land on their farms could increase their labor income to a wonderful degree, and more profitably than by buying additional land; and finally, that dairymen are not yet receiving a proper return for their produce.

How to Make Nothing and Live.

This report of Prof. Leitch, coming at a time when high prices have led many to believe that agriculture is prospering as never before, should be productive of thought. "How is it," it may be asked, "that farmers could make less than nothing on the year's operations, and yet continue in the business?" The answer, as advanced by Prof. Leitch, was that it is impossible to keep one from making a living on the farm, as it will always produce food and raiment, at least.

Low prices, for instance of dairy products (as this was in a dairy district), are ensured because dairymen come into competition with each other in marketing their goods, with the result that prices are kept down to the veriest minimum. The fact that the minimum was too low forced milk producers to join together in important centres and compel buyers to pay higher prices—or in other words, the organization did away more or less with the previous individual selling competition.

Large Farms Profitable

It has already been shown a year ago, in the Caledon survey, that large farms are more profitable than small. Further evidence along this line comes from the Oxford survey, where the 39-acre farm was shown to bring only $524 as "labor income," or wages for the farmer, his wife, and the smaller children, while the 98-acre farm brought $1,296 for the year's work.

As previously stated, this term "work" is not misapplied, as the summer working hours actually averaged thirteen a day. He who is condemned by circumstances to work thirteen hours a day for six months of the year for about $3 per day will be in a position to speak authoritatively on "unlucky thirteen." Nor did the winter months bring the relief that is usually attributed to them, for the working hours for the other six months averaged 11 hours for 7 days in the week. This on dairy farms, of course.

This article, being the substance of an address given by Prof. A. Leitch at Belleville, and at London, gives us the first reports from the recent surveys in Oxford, a splendid farming section. It will pay every farmer to make a careful study of things revealed here and then to apply to his own farm operations, that added something that lies between him and more prosperity. It is also interesting to note the cost of producing milk on the farm. Show these figures to your city friends who say the farmer's profits are excessive.—Editor.

Mr. Leitch in his investigations again found that the larger the farm, the greater the opportunity for making a fair return for the time and money invested. But out of the 450 farms covered, 30 were found to be under 45 acres each, with 39 acres of tillable land, and only 32 acres of actual crop. These small farms required almost as much investment in buildings and plant as did the larger ones, and yet presented small opportunity for utilizing the manpower and livestock "power" to the best advantage.

The point is illustrated by the following condensed $1,873.

Size Farm	Land Value	Plant Value	Labor Income
39 acres	$ 5,223	$5,079	$ 524
52 "	6,051	5,585	719
69 "	8,360	7,100	763
84 "	9,426	7,669	1,223
98 "	10,433	8,111	1,296

Where the size of the farm was increased to 124 acres the labor income was $1,533, and where the size of the farm was 142 acres, the income had risen to $1,783.

In arriving at these figures, it was not found that the failure of the small farm was due by any means to inefficient methods on the part of the operators. To the contrary, some of the best livestock and some of the highest crop yields were found on the small farms. To put it another way, even though the small farm received the personal care and attention of the farmer in a way that a larger acreage could not, the resulting higher yields, both as to crops and milk, were not sufficient to overcome the handicap of a heavy overhead expense, and therefore the income was less.

Faced with these facts—*and they are stated as inescapable*, damning facts, what is one to do? The first impulse would be to take advantage of an unfortunate neighbor who has been forced out by the very conditions here revealed so pitilessly by cold figures and hard logic. But Mr. Leitch suggests another way out, based on further research made to cover the point.

He found that by reducing the waste or non-productive area of the farm—regardless of its total acreage, there was a great possibility of increasing the labor income without increasing investment. One-third of the farms under investigation had shown that by putting the unproductive land to crops wonderful changes could be made in the balance sheet.

Don't Like a Clean Shave

The survey had shown that of the 134 farms of 100 acres, 28 had less than 90 acres cleared; 37 had between 80 and 90 acres ready for the plow; 34 had 71 to 80; while 35 actually had less than 70 acres cleared.

Where a hundred-acre farm had only 64 acres cleared, and additional 10 acres put into crop raised the selling value of the farm by $1,100 without appreciably altering its assessment, and increased the labor income by 50 per cent. The same result was manifest, but in a smaller way as the cleared acreage increased, and by the time that it had reached 95 per cent. there was but little improvement.

This was interpreted by Prof. Leitch as indicating the value of a small woodlot on the farm, nature evidently being opposed to the principle of a *clean shave*, and favoring at least a sort of *small moustache* somewhere around the rear line fence.

"We found," said the professor, "that, contrary to the general urban impression, dairy farmers have not yet reached the profiteering class." This was in Oxford county, where he supposed dairying was more profitable than anywhere else in the Province, and he found that "unless a farm is enormously large it is practically impossible for him to make more than $2,000 a year, which would look small to the ordinary mechanic under present conditions, considering the hours worked. "The public," he went on, "has got to wake up to the fact that milk has been produced too cheaply in the past, and they will have to pay more for it in the future."

This was no mere assertion of opinion, but was reinforced by interesting figures. Until now there has been no serious attempt to find out the actual cost of production of milk that is produced commercially in Canada. Estimates a plenty there have been, and even the Food Control Board was not above holding an "investigation," in the realm of soft-seated chairs, carpeted offices, and stale cigar smoke, with a view to finding the cost, and, presumably, setting a "fair" price for dairy products. Natural prudence seems to have asserted itself in the early stages of the investigation, and it "dried up," without any danger of milk fever.

Mr. Leitch found that while the milk marketed through all the various channels of the dairy industry, including creameries, cheese factories, condensories, city milk dealers, ice cream plants, etc., averaged $2.17 per 100 pounds in cost of production, the money actually received averaged $2.19½.

Throughout the survey an allowance was made of 5 per cent. interest on investment, but in computing the cost of milk production this absurd allowance was increased to 7 per cent., which is a fairer basis of computation.

Many elements were found to enter into the cost of production, and it was only by analyzing the results from all the farms with a keen eye to comparisions that it was possible to bring out the facts that he discovered. For instance, he discovered that where a man had 50 per cent. of his revenue coming from the dairy herd, it only cost him $2.08 per 100 pounds to produce the milk, but where the percentage rose from 60 to 70 per cent., the cost also rose to $2.14; 70 to 80 per cent. showed the cost to be $2.15, and where over 80 per cent. of the farm's revenue came from dairying, the cost of producing the milk was $2.30 per 100 pounds, or over 10c per cwt. *more* than the price actually received for it—while the average farmer of

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A fine country road with fruit orchards on both sides.

WHEN A CHILD *is* DISOBEDIENT

By MIRIAM FINN SCOTT

"HOW shall I teach my child to obey me?" "How shall I punish my child?" These twin and seemingly inseparable questions summarize the problems of scores of earnest parents.

Before proceeding with these problems, let us try to make clear to ourselves just what that thing really is which we call by the vague and sweeping term disobedience; let us try to search out what is behind and beneath the behavior which irritates and bewilders us and renders us desperate. And while we are searching, let us also search ourselves with utmost candor for our motive in desiring that our child be obedient. Is it primarily for our own relief? —or is it primarily for the child's betterment?

For obedience, in the sense that obedience is something demanded by and given to unquestioning authority, I have little regard. But in discipline I do believe—and I am led to speak of discipline here for the reason that in previous articles I have emphasized the need of giving the child "freedom." There is nothing contradictory between the two. The ideal freedom behind the best methods of child-training means freedom from unnecessary suppression, from thoughtless, unreasonable, unjust, unsympathetic guidance; it means freedom from blind, arbitrary direction; it means freedom to grow, to develop naturally and normally, under constant, consistent, and thoughtful direction—a *"freedom" which implies the severest, strictest kind of discipline.* Indeed, discipline is the very foundation of any wise and sane educational method. But we must remember that discipline is a most powerful instrument, and like all powerful instruments it must be used with great care, with great wisdom. Before we undertake the momentous task of constructive discipline we must, with care and tenderness and sympathy, try to discover what are the traits to be overcome, and what are the good qualities to be developed.

THE little boy whom one mother describes as having tremendous energy, being persistent to exhaustion, whose insufferable trait is contrariness, is distinctly of the class where "will" is the paramount problem. This boy requires firm but sympathetic handling, he needs discipline (not punishment, remember), applied wisely to his body, his mind, and his soul. But in disciplining the child's powers the greatest care must be taken not to break them, and not to lose the child's respect and affection.

The handling of such a child is indeed a problem, though far, far less serious a problem than that of the child who is anemic, colorless, who is easily led, and who obeys without question. From the very outset the parents must recognize that the former child is one of unusual promise. But they must also realize that a child who has physical strength, whose intellect is keen, whose emotions are powerful, will, so long as these forces are untrained, express himself violently; especially will he react violently under opposition. But wild and distressing exhibitions must not frighten the mother into thinking that here is a nervous, high-strung, keyed-up temperament, and therefore frighten her into quickly yielding in the fear that, as one mother expressed it, "the emotions are too powerful for the child's frame." What such exhibitions really mean is that the child plainly has no control over his forces, that they get the better of him.

An experience I had with a five-year-old boy will be suggestive in a general way of how to handle a child of this type. This little boy asked a friend and myself to play croquet with him. Before we started the game I gave the little boy the privilege of choosing whatever color mallet he wanted, and he chose the red. The game started, and matters went well for a couple of turns, when all of a sudden the small boy demanded my mallet. Thinking that the handle of his mallet was loose I suggested that he take the one left in the box. "No!" He wanted my mallet, nothing else would do. I examined his, and found it in perfect condition; there was no reason for his having my mallet. I realized at once that here was simply an effort on the child's part to assert his will, and so I calmly and graciously refused his demand. The little boy, however, was persistent; he begged and cried, but I was equally persistent in my refusal, and with my friend continued the game undisturbed, ignoring the boy except when his turn came, to which he no longer gave any attention. I also asked my friend not to notice the child, to betray by neither look nor action, any signs of sympathy for him. The boy wept louder, shouting out his demand

all the time; and when by this method he did not get my attention he lay down on the ground and kicked his legs in the air. Failing by these tactics to draw us to him, he came to me, and began to tug furiously at my skirt, getting hold of my mallet, and trying to wrench it from my hands. But as gently as I could I released my mallet from his grasp, and proceeded with my play. Then he got in front of my ball, and before the wicket; in which cases I removed him bodily, placing him gently out of the way, and went on with my play. Under such painfully trying conditions my friend and I resolutely finished the game, after which we very deliberately put our mallets and balls in the box and went away.

This child had developed an exaggerated case of wilfulness. The whole point of my treatment was to prove to the little boy in a concrete way that his wilfulness did not apparently interfere with my happiness, but that it did interfere with his, that he was the sufferer. I realized that behind this trifling incident was a will that, unless disciplined at once, would mean the ruin of the man in him.

The next day, when my friend and I were again on the croquet-ground, at an opportune moment I asked the boy if he wished to play with us. He did. Each of us picked up the mallet and ball of our choice and the game was played in complete peace and happiness. Though no reference was made to the sad experience of the day before, I knew perfectly well that that child remembered his lesson.

We can hardly conceive of the extent to which disobedience is fostered, and the will-power perverted, by our misunderstanding of our child's nature, or by our failure sympathetically to appreciate the values the child attaches to this act or that desire. Perhaps in our endeavor strictly to carry out an established rule, or to be what we consider eminently just, we leave out of account the imagination or emotions of the child. A little girl of six, of very strong will, who was just learning to write, conceived the tremendous idea of writing a letter to her father, who was coming home late that evening —which letter she was going to place beneath his pillow, to be discovered and read by him when he went to bed. The mother, not appreciating what this meant to the child, put the child off until it suited her convenience. That convenience did not arrive until half-past six; the child's established hour for being in bed was seven. The little girl dictated to her mother what she wanted to say, and the mother mechanically set down the child's message. But this was not enough for the child—she was thrilled with the idea of making the letter the biggest possible surprise—she wanted it to be in her own hand. So with slow, painstaking fingers she began to copy the letter. Her hand grew tired, she grew sleepy, but with unfaltering will she kept on—for before her was the dream of the pleased surprise of her father as he lifted his pillow. Seven o'clock drew near; her mother commanded her to stop; she begged for time, and was given until the stroke of the hour. Seven struck with the letter still unfinished. The mother ordered the child to bed, the child pleaded for time to complete her letter. This the mother flatly refused, and in turn the child flatly refused to obey. Then came the explosion, the clash. The mother forcibly picked the child up and carried her off, the girl resisting and fighting her mother in a tearful passion of wildest violence. By superior strength the child was put to bed. Obedience had been enforced, but the little girl lay sobbing in the dark, wild with grief over the tragedy of her broken dream, and her will furiously vibrant with resentment against her mother—her spirit newly sown with the seed of disobedience!

This violent encounter, this disobedience, and the future disobedience which was here engendered, could all have been avoided if the mother had only understood her child's nature, and had given the proper consideration to her child's will. She should have realized the great thing the letter meant to the girl, and should have let her start it in time to finish it, and thus have sent the child to bed happy, and with that healthy growth of the will which comes from completing an important self-appointed task.

Right here let us remember that good rules are excellent when we master them, but are dangerous when they master us.

WE must always bear in mind that our requests to our children must be reasonable ones. If we would have our children obey us we must deserve their obedience. Disobedience is very often brought on, and the will disordered, through our lack of being simple and straightforward in our dealings with our children. We must state our rules and requests so clearly and with such sincerity that there will be no doubt in the child's mind as to our attitude and meaning, and so that he will be able to tell when we are serious, and when we are merely playing. The little boy whose mother writes that he defiantly says "No" to all her demands—this mother, by the way, admits in her letter that she "fooled" with her child too much—is a victim of just such a bewildering relation.

"Why, Felix, what do you mean by pulling out all the beautiful flowers by their roots?" I heard a mother reprimand her little boy, who came to her with an armful of cosmos still in the bud. "I worked so hard on those flowers!"

"But, mother," the little boy explained, "I didn't pull all. There are a few left."

The reply of this four-year-old boy, plus the picturesque figure he made in his overalls with that bunch of greens in his hands, made the mother forget almost instantly the seriousness of the deed. "Oh, you are such a funny farmer!" she exclaimed with a laugh. "Now, run away and don't be a naughty boy again!"

The boy went back to the cosmos-bed, and literally pulled up every one of the flowers and returned with these to his mother. There followed a terrific scene, although for this second inroad upon the flowers the boy was hardly to be blamed.

Inevitably in our consciousness habit has linked with the word "obedience" the word "punishment." One hopeful thing that has been revealed by the correspondence on this subject is that parents are recognizing that corporal punishment, whether expressed in the form of physical pain actually inflicted, or as an autocratic command which must be obeyed because of the menacing superior force behind it, is failing in its avowed purpose. They are recognizing that "unquestioning obedience," with behind it the penalty of bodily pain, in almost all cases accomplishes, at the best, only a temporary result; and that the ultimate and permanent effect is to beget deceit, and engender servility and hatred and viciousness of spirit; that the ultimate effect is to break or pervert, and not to build character. One mother, who has a tragic story, writes in her anguish that, "my husband and not my son should have gone to

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WILDFIRE

A Tale of Wild Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail." "Raiders of the Purple Sage," "The Light of Western Stars"

SYNOPSIS

THE story opens at Bostil's Ford in the Wild country of the Colorado River. Bostil is a rancher whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen.

The scene of the present chapter is the Sevier Valley, five hundred miles from Bostil's Ford. It is evening and three young men, wild-horse hunters, are preparing for a night in the open. They are talking of a magnificent stallion, which they have named Wildfire, and which they have been trailing unsuccessfully for the past six weeks. Their supplies are giving out, and Bill Stewart and his brother have decided to abandon the quest, but their companion, Lin Slone, passionately longing to capture Wildfire, is determined to go on.

Bill tells Lin that the horse, as he eludes them, is pressing on into new country.

CHAPTER IV. *Continued*

"YEP, Lin, he's sure leavin'," added the other comrade. "Why, he's traveled a bee-line for days! I'll bet he's seen us many a time. Wildfire's about as smart as any man. He was born wild, an' his dam was born wild, an' there you have it. The wildest of all wild creatures—a wild stallion, with the intelligence of a man! A grand hoss, Lin, but one thet'll be hell, if you ever ketch him. He has killed stallions all over the Sevier range. A wild stallion thet's a killer! I never liked him for thet. Could he be broke?"

"I'll break him," said Lin Slone, grimly. "It's gettin' him thet's the job. I've got patience to break a hoss. But patience can't catch a streak of lightnin'."

"Nope; you're right," replied Bill. "If you have some luck you'll get him—mebbe. If he wears out his feet, or if you crowd him into a narrow canon, or run him into a bad place where he can't get by you. Thet might happen. An' then, with Nagger, you stand a chance. Did you ever tire thet hoss?"

"Not yet."

"An' how fur did you ever run him without a break? Why, when we ketched thet sorrel last year I rode Nagger myself—thirty miles, most at a hard gallop. An' he never turned a hair!"

"I've beat thet," replied Lin. "He could run hard fifty miles—mebbe more. Honestly, I never seen him tired yet. If only he was fast!"

"Wal, Nagger aint so durned slow, come to think of thet," replied Bill, with a grunt. "He's good enough for you not to want another hoss."

"Lin, you're goin' to wear out Wildfire, an' then trap him somewhere—is thet the plan?" asked the other comrade.

"I haven't any plan. I'll just trail him, like a cougar trails a deer."

"Lin, if Wildfire gives you the slip he'll have to fly. You've got the best eyes for tracks of any wrangler in Utah."

Slone accepted the compliment with a fleeting, doubtful smile on his dark face. He did not reply, and no more was said by his comrades. They rolled with backs to the fire. Slone put on more wood, for the keen wind was cold and cutting; and then he lay down, his head in his saddle, with a goatskin under him and a saddle-blanket over him.

All three were soon asleep. The wind whipped the sand and ashes and smoke over the sleepers. Coyotes barked from near in darkness, and from the valley ridge came the faint mourn of a hunting wolf. The desert night grew darker and colder.

THE Stewart brothers were wild-horse hunters for the sake of trades and occasional sales. But Lin Slone never traded nor sold a horse he had captured. The excitement of the game, and the lure of the desert, and the love of a horse were what kept him at the profitless work. His type was rare in the uplands.

These were the early days of the settlement of Utah, and only a few of the hardiest and most adventurous pioneers had penetrated the desert in the southern part of that vast upland. And with them came some of that wild breed of riders to which Slone and the Stewarts belonged. Horses were really more important and necessary than men; and this singular fact gave these lonely riders a calling.

Before the Spaniards came there were no horses in the West. Those explorers left or lost horses all over the southwest. Many of them were Arabian horses of purest blood. American explorers and travelers, at the outset of the nineteenth century, encountered countless droves of wild horses all over the plains. Across the Grand Canon, however, wild horses were comparatively few in number in the early days; and these had probably come in by way of California.

The Stewarts and Slone had no established mode of catching wild horses. The game had not developed fast enough for that. Every chase of horse or drove was different; and once in many attempts they met with success.

A favorite method originated by the Stewarts was to find a water-hole frequented by the band of horses or the stallion wanted, and to build round this hole a corral with an opening for the horses to get in. Then the hunters would watch the trap at night, and if the horses went in to drink, a gate was closed across the opening. Another method of the Stewarts was to trail a coveted horse up on a mesa or highland, places which seldom had more than one trail of ascent and descent, and there block the escape, and cut lines of cedars, into which the quarry was run till captured. Still another method, discovered by accident, was to shoot a horse lightly in the neck and sting him. This last, called creasing, was seldom successful and for that matter in any method ten times as many horses were killed as captured.

Lin Slone helped the Stewarts in their own way, but he had no especial liking for their tricks. Perhaps a few remarkable captures of remarkable horses had spoiled Slone. He was always trying what the brothers claimed to be impossible. He was a fearless rider, but he had the fault of saving his mount, and to kill a wild horse was a tragedy for him. He would much rather have hunted alone, and he had been alone on the trail of the stallion Wildfire when the Stewarts had joined him.

LIN SLONE awoke next morning and rolled out of his blanket at his usual early hour. But he was not early enough to say good-by to the Stewarts. They were gone.

The fact surprised him and somehow relieved him. They had left him more than his share of the outfit, and perhaps that was why they had slipped off before dawn. They knew him well enough to know that he would not have accepted it. Besides, perhaps they felt a little humiliation at abandoning a chase which he chose to keep up. Anyway, they were gone, apparently without breakfast.

The morning was clear, cool, with the air dark like that before a storm, and in the east, over the steely wall of stone, shone a redness growing brighter.

Slone looked away to the west, down the trail taken by his comrades, but he saw nothing moving against that cedar-dotted waste.

"Good-by," he said, and he spoke as if he was saying good-by to more than comrades.

"I reckon I won't see Sevier Village soon again—an' maybe never," he soliloquized.

There was no one to regret him, unless it was old Mother Hall, who had been kind to him on those rare occasions when he got out of the wilderness. Still, it was with regret that he gazed away across the red valley to the west. Slone had no home. His father and mother had been lost in the massacre of a wagon-train by Indians, and he had been one of the few saved and brought to Salt Lake. That had happened when he was ten years old. His life thereafter had been hard, and but for his sturdy Texas training he might not have survived. The last five years he had been a horse-hunter in the wild uplands of Nevada and Utah.

Slone turned his attention to the pack of supplies. The Stewarts had divided the flour and the parched corn equally, and unless he was greatly mistaken they had left him most of the coffee and all of the salt.

"Now I hold that decent of Bill an' Abe," said Slone, regretfully. "But I could have got along without it better'n they could."

Then he swiftly set about kindling a fire and getting a meal. In the midst of his task a sudden ruddy brightness fell around him. Lin Slone paused in his work to look up.

The sun had risen over the eastern wall.

"Ah!" he said, and drew a deep breath.

The cold, steely, darkling sweep of desert had been transformed. It was now a world of red earth and gold rocks and purple sage, with everywhere the endless straggling green cedars. A breeze whipped in, making the fire roar softly. The sun felt warm on his cheek. And at the moment he heard the whistle of his horse.

"Good old Nagger!" he said. "I shore won't have to track you this mornin'."

Presently he went off into the cedars to find Nagger and the mustang that he used to carry a pack. Nagger was grazing in a little open patch among the trees, but the pack-horse was missing. Slone seemed to know in what direction to go to find the trail, for he came upon it very soon. The pack-horse wore hobbles, but he belonged to the class that could cover a great deal of ground when hobbled. Slone did not expect the horse to go far, considering that the grass thereabouts was good. But in a wild-horse country it was not safe to give any horse a chance. The call of his wild brethren was irresistible. Slone, however, found the mustang standing quietly in a clump of cedars, and, removing the hobbles, he mounted and rode back to camp. Nagger caught sight of him and came at his call.

This horse Nagger appeared as unique in his class as Slone was rare among riders. Nagger seemed of several colors, though black predominated. His coat was shaggy, almost woolly, like that of a sheep. He was huge, rawboned, knotty, long of body and long of leg, with the head of a war charger. His build did not suggest speed. There appeared to be something slow and ponderous about him, similar to an elephant, with the same suggestion of power and endurance.

SLONE discarded the pack-saddle and bags. The latter were almost empty. He roped the tarpaulin on the back of the mustang, and, making a small bundle of his few supplies, he tied that to the tarpaulin. His blanket he used for a saddle-blanket on Nagger. Of the utensils left by the Stewarts he chose a couple of small iron pans, with long handles. The rest he left. In his saddle-bags he had a few extra horseshoes, some nails, bullets for his rifle, and a knife with a heavy blade.

"Not a rich outfit for a far country," he mused. Slone did not talk very much, and when he did he addressed Nagger and himself simultaneously. Evidently he expected a long chase, one from which he would not return, and light as his outfit was it would grow too heavy.

Then he mounted and rode down the gradual slope, facing the valley and the black, bold, flat mountain to the southeast. Some few hundred yards from camp he halted Nagger and bent over in the saddle to scrutinize the ground.

The clean-cut track of a horse showed in the bare, hard sand. The hoof-marks were large, almost oval, perfect in shape, and manifestly they were beautiful to Lin Slone. He gazed at them for a long time, and then he looked across the dotted red valley up the vast ridgy steps, toward the black plateau and beyond. It was the look that an Indian gives to a strange country. Then Slone slipped off the saddle and knelt to scrutinize the horse tracks. A little sand had blown into the depressions, and some of it was wet and some of it was dry. He took his time about examining it, and he even tried gently blowing other sand into the tracks, to compare that with what was already there. Finally he stood up and addressed Nagger.

"Reckon we won't have to argue with Abe an' Bill this mornin'," he said, with satisfaction. "Wildfire made that track yesterday, before sun-up."

Thereupon Slone remounted and put Nagger to a trot. The pack-horse followed with an alacrity that showed he had no desire for loneliness.

As straight as a bee-line Wildfire had left a trail down into the floor of the valley. He had not stopped to graze, and he had not looked for water. Slone had hoped to find a water-hole in one of the deep washes in the red earth, but if there had been any water there Wildfire would have scented it. He had not had a drink for three days that Slone knew of. And Nagger had not drunk for forty hours. Slone had a canvas water-bag hanging over the pommel, but it was a habit of his to deny himself, as far as possible, till his horse could drink also. Like an Indian, Slone ate and drank but little.

It took four hours of steady trotting to reach the middle and bottom of that wide, flat valley. A network of washes cut up the whole centre of it, and they were all as dry as bleached bone. To cross these Slone had only to keep Wildfire's trail. And it was proof of

Nagger's quality that he did not have to veer from the stallion's course.

It was hot down in the lowland. The heat struck up, reflected from the sand. But it was a March sun, and no more than pleasant to Slone. The wind rose, however, and blew dust and sand in the faces of horse and rider. Except lizards Slone did not see any living things.

Miles of low greasewood and sparse yellow sage led to the first almost imperceptible rise of the valley floor on that side. The distant cedars beckoned to Slone. He was not patient, because he was on the trail of Wildfire; but, nevertheless, the hours seemed short.

Slone had no past to think about, and the future held nothing except a horse, and so his thoughts revolved the possibilities connected with this chase of Wildfire. The chase was hopeless in such country as he was traversing, and if Wildfire chose to roam around valleys like this one Slone would fail utterly. But the stallion had long ago left his band of horses, and then, one day his favorite consorts, and now he was alone, headed with unerring instinct for wild, untrammeled ranges. He had been used to the pure, cold water and the succulent grass of the cold desert uplands. Assuredly he would not tarry in such barren lands as these.

For Slone an ever-present and growing fascination lay in Wildfire's clear, sharply defined tracks. It was as if every hoof-mark told him something. Once, far up the interminable ascent, he found on a ridge-top tracks showing where Wildfire had halted and turned.

"Ha, Nagger!" cried Slone, exultingly. "Look there! He's begun facin' about. He's wonderin' if we're still after him. He's worried. . . But we'll keep out of sight—a day behind."

WHEN Slone reached the cedars the sun was low down in the west. He looked back across the fifty miles of valley to the colored cliffs and walls. He seemed to be above them now, and the cool air, with tang of cedar and juniper, strengthened the impression that he had climbed high.

A mile or more ahead of him rose a gray cliff with breaks in it and a line of dark cedars or pinons on the level rims. He believed these breaks to be the mouths of canons, and so it turned out. Wildfire's trail led into the mouth of a narrow canon with very steep and high walls. Nagger snorted his perception of water, and the mustang whistled. Wildfire's tracks led to a point under the wall where a spring gushed forth. There were mountain-lion and deer tracks also, as well as those of smaller game.

Slone made camp here. The mustang was tired. But Nagger, upon taking a long drink, rolled in the grass as if he had just begun the trip. After eating, Slone took his rifle and went out to look for deer. But there appeared to be none at hand. He came across many lion tracks, and saw, with apprehension, where one had taken Wildfire's trail. Wildfire had grazed up the canon, keeping on and on, and he was likely to go miles in a night. Slone reflected that as small as were his own chances of getting Wildfire, they were still better than those of a mountain-lion. Wildfire was the most cunning of all animals—a wild stallion; his speed and endurance were incomparable; his scent as keen as those animals that relied wholly upon scent to warn them of danger, and as for sight, it was Slone's belief that no hoofed creature, except the mountain-sheep used to high altitudes, could see as far as a wild horse.

It bothered Slone a little that he was getting into a lion country. Nagger showed nervousness, something unusual for him. Slone tied both horses with long halters and stationed them on patches of thick grass. Then he put a cedar stump on the fire and went to sleep. Upon awakening and going to the spring he was somewhat chagrined to see that deer had come down to drink early. Evidently they were numerous. A lion country was always a deer country, for the lions followed the deer.

Slone was packed and saddled and on his way before the sun reddened the canon wall. He walked the horses. From time to time he saw signs of Wildfire's consistent progress. The canon narrowed and the walls grew lower and the grass increased. There was a decided ascent all the time. Slone could find no evidence that the canon had even been traveled by hunters or Indians. The day was pleasant and warm and still. Every once in a while a little breath of wind would bring a fragrance of cedar and pinon, and a sweet hint of pine and sage. At every turn he looked ahead, expecting to see the green or pine and the gray of sage. Toward the middle of the afternoon, coming to a place where Wildfire had taken to a trot, he put Nagger to that gait, and by sundown had worked up to where the canon was only a shallow ravine. And finally it turned once more, to lose itself in a level where straggling pines stood high above the cedars, and great, dark-green silver spruces stood above the pines. And here were patches of sage, fresh and pungent, and long reaches of bleached grass. It was the edge of a forest. Wildfire's trail went on. Slone came at length to a group of pines, and here he found the remains of a camp-fire, and some flint arrow-heads. Indians had been in there, probably having come from the opposite direction to Slone's. This encouraged him, for where Indians could hunt so could he. Soon he was entering a forest where cedars and pinons and pines began to grow thickly. Presently he came upon a faintly defined trail, just a dim, dark line even to an experienced eye. But it was a trail, and Wildfire had taken it.

Slone halted for the night. The air was cold. And the dampness of it gave him an idea there were snow-banks somewhere not far distant. The dew was already heavy on the grass. He hobbled the horses and put a bell on Nagger. A bell might frighten lions that had never heard one. Then he built a fire and cooked his meal.

IT had been long since he had camped high up among the pines. The sough of the wind pleased him, like music. There had begun to be prospects of pleasant experience along with the toil of chasing Wildfire. He was entering new and strange and beautiful country. How far might the chase take him? He did not care. He was not sleepy, but even if he had been it developed that he must wait till the coyotes ceased their barking round his campfire. They came so close that he saw their gray shadows in the gloom. But presently they wearied of yelping at him and went away. After that the silence, broken only by the wind as it roared and lulled, seemed beautiful to Slone. He lost completely that sense of vague regret which had remained with him, and he forgot the Stewarts. And suddenly he felt absolutely free, alone, with nothing behind to remember, with wild, thrilling, nameless life before him. Just then the long mourn of a timber wolf wailed in with the wind. Seldom had he heard the cry of one of those night wanderers. There was nothing like it—no sound like it to fix in the lone camper's heart the great solitude and the wild.

CHAPTER V

IN the early morning when all was gray and the big, dark pines were shadowy spectres, Slone was awakened by the cold. His hands were so numb that he had difficulty starting a fire. He stood over the blaze, warming them. The air was nipping, clear and thin, and sweet with frosty fragrance.

Daylight came while he was in the midst of his morning meal. A white frost covered the ground and crackled under his feet as he went out to bring in the horses. He saw fresh deer tracks. Then he went back to camp for his rifle. Keeping lookout for game, he continued his search for the horses.

The forest was open and park-like. There were no fallen trees or evidences of fire. Presently he came to a wide glade in the midst of which Nagger and the pack-mustang were grazing with a herd of deer. The size of the latter amazed Slone. The deer he had hunted back on the Sevier range were much smaller than these. Evidently these were mule deer, closely allied to the elk. They were so tame they stood facing him curiously, with long ears erect. It was sheer murder to kill a deer standing and watching like that, but Slone was out of meat and hungry and facing a long, hard trip. He shot a buck, which leaped spasmodically away, trying to follow the herd, and fell at the edge of the glade. Slone cut out a haunch, and then, catching the horses, he returned to camp, where he packed and saddled, and at once rode out on the dim trail.

The wildness of the country he was entering was evident in the fact that as he passed the glade where he had shot the deer a few minutes before, there were coyotes quarreling over the carcass.

Slone could see ahead and on each side several hundred yards, and presently he ascertained that the forest floor was not so level as he had supposed. He had entered a valley or was traversing a wide, gently sloping pass. He went through thickets of juniper, and had to go around clumps of quaking asp. The pines grew larger and farther apart. Cedars and pinons had been left behind, and he had met with no silver spruces after leaving camp. Probably that point was the height of a divide. There were banks of snow in some of the hollows on the north side. Evidently the snow had very recently melted, and it was evident also that the depth of snow through here had been fully ten feet, judging from the mutilation of the juniper-trees where the deer, standing on the hard, frozen crust, had browsed upon the branches.

The quiet of the forest thrilled Slone. And the only movement was the occasional gray flash of a deer or coyote across a glade. No birds of any species crossed Slone's sight. He came, presently, upon a lion track in the trail, made probably a day before. Slone grew curious about it, seeing how it held, as he was holding, to Wildfire's tracks. After a mile or so he made sure the lion had been trailing the stallion, and for a second he felt a cold contraction of his heart. Already he loved Wildfire, and by virtue of all this toil of travel considered the wild horse his property.

"No lion could ever get close to Wildfire," he soliloquized, with a short laugh. Of that he was absolutely certain.

THE sun rose, meeting the frost, and a breath of warm air, laden with the scent of pine, moved heavily under the huge, yellow trees. Slone passed a point where the remains of an old camp-fire and a pile of deer antlers were further proof that Indians visited this plateau to hunt. From this camp broader, more deeply defined trails led away to the south and east. Slone kept to the east trail, in which Wildfire's tracks and those of the lion showed clearly. It was about the middle of the forenoon when the tracks of the stallion and lion left the trail to lead up a little draw where grass grew thick. Slone followed, reading the signs of Wildfire's progress, and the action of his pursuer, as well as if he had seen them. Here the stallion had plowed into a snow-bank, eating a hole two feet deep; then he had grazed around a little; then on and on; there his splendid tracks were deep in the soft earth. Slone knew what to expect when the track of the lion veered from those of the horse, and he followed the lion tracks. The ground was soft from the late melting of snow, and Nagger sunk deep. The lion left a plain track. Here he stole steadily along; there he left many tracks at a point where he might have halted to make sure of his scent. He was circling on the trail of the stallion, with cunning intent of ambush. The end of this slow, careful stalk of the lion, as told in his tracks, came upon the edge of a knoll where he had crouched to watch and wait. From this perch he had made a magnificent spring—Slone estimating it to be forty feet—but he had missed the stallion. There were Wildfire's tracks again, slow and short, and then deep and sharp where in the impetus of fright he had sprung out of reach. A second leap of the lion, and then lessening bounds, and finally an abrupt turn from Wildfire's trail told the futility of that stalk. Slone made certain that Wildfire was so keen that as he grazed along he had kept to open ground.

Wildfire had run for a mile, then slowed down to a trot, and he had circled to get back to the trail he had left. Slone believed the horse was just so intelligent. At any rate, Wildfire struck the trail again, and turned at right angles to follow it.

Here the forest floor appeared perfectly level. Patches of snow became frequent, and larger as Slone went on. At length the patches closed up, and soon extended as far as he could see. It was soft, affording difficult travel. Slone crossed hundreds of deer tracks, and the trail he was on eventually became a deer runway.

Presently, far down one of the aisles between the great pines Slone saw what appeared to be a yellow cliff, far away. It puzzled him. And as he went on he received the impression that the forest dropped out of sight ahead. Then the trees grew thicker, obstructing his view. Presently the trail became soggy and he had to help his horse. The mustang floundered in the soft snow and earth. Cedars and pinons appeared again, making travel still more laborious.

All at once there came to Slone a strange consciousness of light and wind and space and void. On the instant his horse halted with a snort. Slone quickly looked up. Had he come to the end of the world? An abyss, a canon, yawned beneath him, beyond all comparison in its greatness. His keen eye, educated to desert distance and dimension, swept down and across, taking in the tremendous truth, before it staggered his comprehension. But a second sweeping glance, slower, becoming intoxicated with what it beheld, saw gigantic cliff-steps and yellow slopes dotted with cedars, leading down to clefts filled with purple smoke, and these led on and on to a ragged red world of rock, bare, shining, bold, uplifted in mesa, dome, peak, and crag, clear and strange in the morning light, still and sleeping like death.

This, then, was the great canon, which has seemed like a hunter's fable rather than truth. Slone's sight dimmed, blurring the spectacle, and he found that his eyes had filled with tears. He wiped them away and looked again and again, until he was confounded by the vastness and the grandeur and the vague sadness of the scene. Nothing he had ever looked at had affected him like this canon, although the Stewarts had tried to prepare him for it.

To be continued

MORE FARMERS WANTED

By R. S. Daley

HUNDREDS of men, both young and old, who left the farms a few years ago would be glad to get back to the land were they in a position to do so and if opportunity offered.

There is a demand for more farmers. Thousands of acres are lying untouched in the Canadian Northwest, the granary of the world. Many of those who a few years ago left the noisy cities for the quiet prairie are to-day owners of hundreds of acres of the great wheat country that helps to feed the world.

Farm work is entirely changed to what it was a few years ago. There are the tractors, milking machines, feed and litter carriers, which lessen the stable work to a minimum. Hay loaders, etc., in fact most every phase of farm work, are operated on the easiest possible plan.

Then again the country homes are not deprived of the city conveniences. The farm lighting plant affords light and power to run the light machinery about the farm. Hot and cold water on tap at small cost, telephone, rural mail and best of all the automobile.

Then there is the United Farmers' organization, the great Farmers' Union which is rapidly gaining members throughout the whole Dominion. The farmers have awakened to the fact that in order to get justice they must organize. All this tends to make the farm life more pleasant and to bring farming to the front as one of the greatest industries in the world.

FARM PROFITEERING EXPLODED

Continued from page 17

the 450 in the survey only received a "profit" of 2c per cwt.!

From this, Prof. Leitch deducted that, outside of the case of one particularly qualified to become a dairying expert, and follow that line with exceptional skill, the use of a cash crop or other supplementary lines of livestock was essential to profitable operation. This cash crop in the Oxford survey varied widely, all the way from turnips to wheat, or sheep to pigs.

Profits Lie in Diversity

There was room on a dairy farm even for sheep, he said, and pigs were more profitable than dairying in spite of the high cost of feed; but he did not wish to be taken as saying that either one should be raised exclusively. It was in diversification that profits lay.

The size of the farm also played a part in the successful production of milk, he found. This can be best illustrated by the use of a few of Prof. Leitch's figures for specialized dairy farms:

Acres	Price Received	Cost Per 100	Labor Income
21 to 45....	$2.21	$2.70	$ 494
46 to 60....	2.19	2.36	720
61 to 75....	2.17	2.54	916
76 to 90....	2.20	1.94	1,255
91 to 110....	2.24	1.95	1,353
111 to 135....	2.24	1.81	1,610

Several important points may be gleaned from the above table. In the first place, milk produced on farms ranging from 21 up to 75 acres was produced actually at a heavy loss, and any labor income made by the farms was produced after the loss had been paid by some other line of activity.

In following the column of cost of production it is noted that while the tendency as the farm enlarged was to lower the cost, it showed an abrupt reversal of form in the case of farms that come in between 61 and 75 acres. These are neither "fish, flesh nor fowl," and require more than one man's labor, but not two men's, with the result that they must be farmed inefficiently by one man, or extravagantly by two.

The third count in the cost of milk production, Prof. Leitch found, was the yield of the cow. The heavier yielding cows paid more profits than their

UNION BANK OF CANADA

54th Annual Statement—30th November, 1918

The Fifty-fourth Annual Meeting of the Shareholders of the Union Bank of Canada was held at the Head Office of the Bank, in the City of Winnipeg, at twelve noon, on Wednesday, the 8th instant.

The President, MR. JOHN GALT, in the chair.

DIRECTORS' REPORT

The Directors have pleasure in presenting their report showing the result of the business of the Bank for the year ending November 30th, 1918.

During the year, owing to the depletion of the staff caused by enlistment for military service, the following offices were closed:—Coatsworth, Eastons Corners and Toledo in the Province of Ontario; Adanac, Guernsey, Jansen, Major, Netherhill and Salvador in the Province of Saskatchewan; of which all except Adanac have since been reopened.

The number of Branches and Agencies in operation on November 30th, 1918, was 299.

The usual inspection of all Branches and Agencies has been made.

Mr. S. E. Elkin, M.P., of St. John, N.B., has been elected to fill a vacancy on the Board of Directors.

JOHN GALT, President.

PROFIT AND LOSS ACCOUNT

Balance at credit of account, 30th November, 1917.	$106,624.34
Net profits, for the year, after deducting expenses of management, interest due depositors, reserving for interest and exchange, and making provision for bad and doubtful debts and for rebate on bills under discount, have amounted to	824,174.56
	$930,798.90

Which has been applied as follows:—

Dividend No. 124, 2¼ per cent., paid 1st March, 1918	$112,500.00
Dividend No. 125, 2¼ per cent., paid 1st June, 1918	112,500.00
Dividend No. 126, 2¼ per cent., paid 3rd September, 1918	112,500.00
Dividend No. 127, 2¼ per cent., payable 2nd December, 1918	112,500.00
Transferred to Rest Account	200,000.00
Written off Bank Premises Account	75,000.00
Contribution to Officers' Pension Fund	10,000.00
Contribution to Halifax Relief Fund	5,000.00
Contribution to Canadian Red Cross, Manitoba Branch	5,000.00
Contribution to Young Men's Christian Association Overseas	3,000.00
Contribution to Salvation Army Overseas	2,000.00
Contribution to Belgian Relief Fund	1,000.00
Contributions to Knights of Columbus, Army Hut Appeal	1,000.00
Contribution to Navy League of Canada, Sailors' Week	2,500.00
War Tax on Bank Note Circulation to 30th November, 1918	50,000.00
Balance of Profits carried forward	126,298.90
	$930,798.90

General Statement of Liabilities and Assets

AS ON 30th NOVEMBER, 1918

LIABILITIES

Capital Stock		$ 5,000,000.00
Rest Account	$ 3,600,000.00	
Balance of Profit and Loss Account carried forward	126,298.90	
	$ 3,726,298.90	
Unclaimed Dividends	10,261.43	
Dividend No. 127, payable 2nd December, 1918	112,500.00	
		3,849,060.33
		8,849,060.33
Notes of the Bank in circulation	12,134,649.00	
Deposits not bearing interest	58,805,207.86	
Deposits bearing interest	68,437,490.47	
Balances due to other Banks in Canada	424,601.94	
Balances due to Banks and Banking Correspondents elsewhere than in Canada	1,751,177.75	
		141,553,127.02
Acceptances under Letters of Credit		2,706,467.06
Liabilities not included in the foregoing		72,797.11
		$153,181,451.52

ASSETS

Gold and Silver Coin	$ 940,446.58	
Dominion Government Notes	15,113,307.00	
		$ 16,053,753.58
Deposit with the Minister of Finance for the purposes of the Circulation Fund		260,000.00
Deposit in the Central Gold Reserves		7,800,000.00
Notes of other Banks		763,793.00
Cheques on other Banks		3,817,392.16
Balances due by other Banks in Canada		92,051.67
Balances due by Banks and Banking Correspondents elsewhere than in Canada		2,933,356.72
Dominion and Provincial Government Securities not exceeding market value		12,527,937.82
Canadian Municipal Securities, and British, Foreign and Colonial Public Securities other than Canadian		15,720,338.76
Railway and other Bonds, Debentures and Stocks not exceeding market value		2,501,824.71
Call and Short (not exceeding 30 days) Loans in Canada, on Bonds, Debentures and Stocks		6,508,728.64
Call and Short (not exceeding 30 days) Loans elsewhere than in Canada		3,389,150.00
		72,368,327.06
Other Current Loans and Discounts in Canada (less rebate of interest)		74,021,028.40
Other Current Loans and Discounts elsewhere than in Canada (less rebate of interest)		1,944,112.28
Real Estate other than Bank Premises		268,152.80
Mortgages on Real Estate sold by the Bank		141,656.39
Overdue Debts, estimated loss provided for		327,941.58
Bank Premises, at not more than cost, less amounts written off		1,237,606.70
Liabilities of customers under Letters of Credit, as per contra		2,706,467.06
Other Assets not included in the foregoing		166,159.25
		$153,181,451.52

JOHN GALT, President

H. B. SHAW, General Manager.

Report of the Auditors to the Shareholders of the Union Bank of Canada.

In accordance with the provisions of subsections 19 and 20 of Section 56 of the Bank Act, we report to the shareholders as follows:—

We have audited the above Balance Sheet with the books and vouchers at Head Office and with the certified returns from the branches.

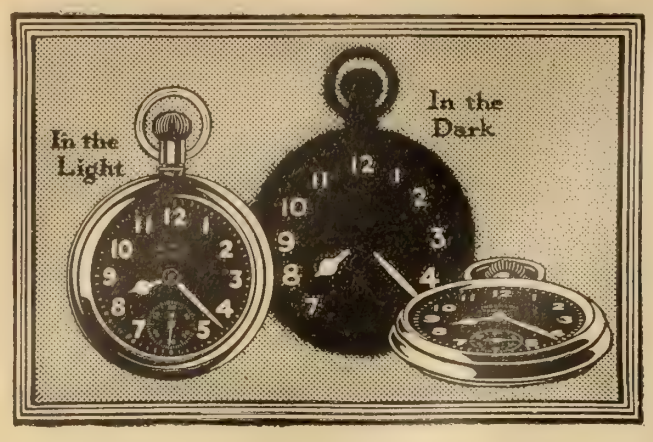
We have obtained all the information and explanations that we have required, and are of the opinion that the transactions of the Bank which have come under our notice have been within the powers of the Bank.

In addition to our verification at the 30th November, we have, during the year, checked the cash and verified the securities representing the investments of the Bank at its chief office and principal branches and found them to be in agreement with the entries in the books of the Bank relating thereto

In our opinion the Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the affairs of the Bank, according to the best of our information, and the explanations given to us, and as shown by the books of the Bank.

T. HARRY WEBB, E. S. READ, C. R. HEGAN,
Auditors, of the firm of
WEBB, READ, HEGAN & CO.,
Chartered Accountants.

Winnipeg, 20th December, 1918.



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A Landship Out of Its Element.

lighter-yielding sisters, in spite of the more expensive food consumed.

In cases when men paid particular attention to keeping up the fertility of the farm and increasing the crop yields, the milk was found to be less profitable in spite of the increased amount of feed grown than where the attention was paid to the production of the cows. In other words, where the expense was put into the dairy cow's bill-of-fare, she paid better returns than where the production of the farm was looked after.

The fundamental reason for this, he asserted, is the fact that the farm crops must eventually be marketed through the dairy animal, and if she is not qualified to turn the feed into a maximum of revenue-producing milk, she will not be profitable, and most dairy feeds can be bought almost as cheaply as they can be produced, he declared.

To bring this out more clearly some attention was paid to the amount expended by farmers of all classes in the purchase of dairy feeds, and it was discovered that those who bought the most concentrates had the best showing, while those who tried to feed economically made a poorer balance sheet at the end of the year.

In summing up, Prof. Leitch's survey can not be said to be reassuring. He has gone into the situation thoroughly with the aid of experts and has been able to bring surprising facts to the notice of the men involved, and who did not know just how they stood from one end of the year to the other.

Out of the 450 men in the survey, only 43 were found who kept fairly good farm accounts, and these accounts for the most part only amounted to a record of the produce sold from the farm and feeds bought.

That in the "prosperous" section of Oxford county such records are being made—and that section of Ontario has all the ear-marks of prosperity—is Prof. Leitch's justification for the statement that one reason for the poor showing is the low price at which dairy products have been selling, and that prices will have to find a new level in the days to come, based on the appreciation of the public of the value of dairy products in sustaining life and promoting growth.

MAKING A SEED CENTRE

One feature of the Representative's work in Pontiac County, Quebec, is the organization of a Seed Centre in conjunction with the Canadian Seed Growers' Association. The Shawville Seed Centre, as it is known, has not yet produced much seed suitable for registration, but, starting in 1915 with registered seed secured from members of the C.S.G.A., it has produced several carloads of improved Banner Oats and Arthur peas, some of which have been shipped to other parts of the province, while a large amount has been sold to farmers within the county, who were anxious to secure supplies of good seed near at hand. This work has tended to greatly improve the general stock of seed in the county, and this year a number of cars of practically pure Banner Oats will be available for seed purposes. All the fields of the members of the Seed Centre are inspected and scored by the Representative, and a report on them sent in to the secretary of the C.S.G.A. —*C. H. Hodge, Representative.*

Actual Tank Scenes From the Front.

Treats *for* Party Suppers

Bread for Sandwiches

BREAD for sandwiches should be at least a day old. Cut slices very thin, and where butter is used cream it well with a wooden spoon before spreading, or have it in a moderately warm place so that it may be soft enough to spread evenly without becoming melted and oily. It is usually recommended to butter the bread before cutting from the loaf. If the loaf is not exactly the same shape on both sides, the slices will not match exactly when put together. With a perfectly round or square loaf this method is excellent. Sandwiches which are prepared several hours before serving time, may be kept fresh and moist by wrapping in a napkin, wrung as dry as possible out of cold water, and kept in a cool place.

Egg and Celery Sandwiches

1 cup chopped celery
1 hard cooked egg
¼ cup boiled salad dressing
Salt if necessary

Put celery and egg through the food chopper using the finest cutter; add salad dressing and salt if necessary; spread between thin slices of buttered bread.

Cheese and Nut Sandwiches

Mix equal parts of grated cheese and chopped nut meats, season with salt and cayenne, moisten with salad dressing and spread between thin slices of buttered bread.

Potted Cheese for Sandwich Filling

1 pound cheese
2 tablespoons melted butter
¼ cup cream
1 tablespoon salt
1 tablespoon vinegar
2 teaspoons mustard
½ teaspoon cayenne

Put cheese through the meat grinder a couple of times. Add the other ingredients and mix thoroughly. Pack in small pars or wrap in paraffine paper. Chopped pickles, olives or pimentoes may be added for variety when the sandwiches are being made.

Bread and Butter Folds With Cheese

Cut white bread and brown bread in slices half an inch thick. Butter, spread with club cheese and place three slices together, a white between two brown slices or a brown between two whites. Press well together and cut downwards in cuts one-half to three quarters of an inch wide. Serve piled log-cabin fashion on a plate covered with a napkin.

Egg Sandwiches

Cook eggs hard, chop fine or force through a strainer or potato ricer. Season with salt and pepper and moisten with salad dressing. Spread between thin slices of buttered bread.

Sardine Sandwiches

Mash sardines to a paste, season with salt, cayenne and a few drops of lemon juice. Spread between thin slices of buttered bread.

Ham Sandwiches

Spread thin slices of bread with mustard butter (see recipe for Club Cheese Sandwich), spread with sliced or chopped ham.

Chicken Sandwiches

Chop cold boiled chicken and moisten with salad dressing, or season with salt and pepper and moisten with rich chicken stock. Prepare as other sandwiches.

Nut and Cheese Sandwiches

Mix equal parts of grated cheese and chopped walnuts. Moisten with salad dressing, season with salt and cayenne. Prepare as other sandwiches.

Cheese Club Sandwiches

Make a "Mustard Butter" Dressing, by creaming one-quarter cup butter with one teaspoon dry mustard, a few drops of vinegar, salt and a few grains cayenne. Cut bread in half inch slices, remove crusts, spread with mustard butter, cover with a lettuce leaf, spread with salad dressing, cover with cheese cut in thin slices, sprinkle with chopped pickles and cover with a second slice of bread spread with mustard butter. Cut in quarters diagonally.

Nut and Brown Bread Sandwiches

Put freshly roasted peanuts or walnuts through the food chopper, using the finest cutter. Season with salt and mix to a smooth paste with salad dressing. Where walnuts are used cut the bread a little thicker than usual for sandwiches, trim off the crusts, cut the slices across diagonally and in the centre of each slice stick a half walnut. The walnut can be made to stick by dipping the under side in a very little butter. When lettuce is in season a lettuce leaf makes a pleasing addition to a nut sandwich.

Nut Bread

½ cup sugar, brown or white
1 egg
2½ cups flour
4 teaspoons baking powder
½ teaspoon salt
1 scant cup milk
1 cup shelled walnuts
½ cup chopped dates

Beat the egg, add sugar and milk. Sift two cups of the flour with the salt and baking powder. Combine the two mixtures. Add the dates rolled in the remaining flour and the nuts. Bake in greased pans or baking powder tins. Don't fill the dishes more than two-thirds full.

Nut Bread or any fruit brown bread served with a jelly, a fruit salad, an apple and celery salad or coddled apples makes a nice lunch.

Hot Tea Biscuits

In very cold weather hot tea biscuits can be had for refreshments late in the evening with very little trouble. Make the biscuits in the afternoon and immediately they are put in the pan set them out of doors to freeze. Twenty minutes before they are to be served bring them in and set them at once in a very hot oven. The freezing makes them lighter than ordinary biscuits.

To make the biscuits, take 2 cups flour, 4 teaspoons baking powder and one teaspoon salt. Sift together three or four times to work in as much air as possible. Lightly rub in 2 tablespoons shortening, gradually add ¾ cup milk, "cutting" it in with a knife. Roll out three-fourths of an inch thick and cut with a small biscuit cutter.

Fruit Buns Toasted

Take fresh fruit buns, break and toast on the broken side, butter and serve hot with a salad, a jelly, or cheese balls and cocoa.

Mock Angel Cake

Whites of 2 eggs
1 cup granulated sugar
1 cup flour
1 cup sweet milk
2 teaspoons baking powder
½ teaspoon salt

Dissolve sugar in milk and heat to boiling. Sift the dry ingredients together four times, and stir into the hot milk. Cool and fold in the stiffy beaten egg whites. Bake in funnel cake tin, ungreased.

Sugar Cookies

1½ cups brown sugar
1 cup butter
2 eggs
½ cup sour cream
1 teaspoon soda
5 cups flour

Sift the soda with the flour, and work in the butter with the tips of the fingers. Stir in the sugar and gradually work in the beaten eggs and cream. Add a little more cream or milk if necessary. Roll out and bake.

Scottish Fancies

1 egg
½ cup sugar
2-3 tablespoon melted butter
1 cup rolled oats
½ cup shredded cocoanut
1-3 teaspoon salt
¼ teaspoon vanilla

Beat egg very light, gradually add sugar and stir in remaining ingredients. Drop mixture by spoonfuls on a greased pan and bake in a moderate oven, until delicately browned.

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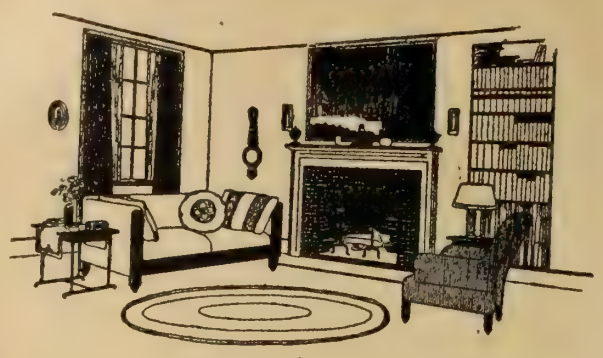
Building up a Library

By GENEVIEVE



Among the homes of atmosphere, culture, refinement, that I have known, one of the finest was in a little unpretending farm house where the furniture was worn comfortable with use, and the littlest picture on the wall had a meaning. But it wasn't the pictures or the furniture that gave the place its personality. Across one end of the sitting-room where the family gathered in the evening there was a book-case. It had been built there when the father was getting the old house ready for his bride twenty-five years ago, and every year since a few more books had found their way to its shelves until now there was a library that would have been a credit to the wealthiest house in the land. It was not just an indifferent collection picked up here and there, because they had happened to be popular at the moment, or because the binding would look well through glass doors, or because a set of such and such was supposed to be necessary to complete a book-lover's collection. It was a library of books, chosen each one with a purpose—because it was worth not only reading, but having, to reread or to refer to, or to lend.

After all, I suppose it wasn't the books themselves that made the place "different," much as one might revel in their treasures—it was the way the books made the people different that counted. They were the broadest people I ever knew, even though some of them had never been fifty miles from home. They had read of every land under the sun; they were students of present-day problems, as well as the history leading up to them. They were good people to live with; the best thinkers in the world had shown them the light to fine shades of humors, and feeling, and understanding, and sympathy, and conduct. They seemed to take a rather unusual delight in the experiences of everyday living; the philosophies and pictures of the world's most far-visioned dreamers had cultivated an imagination that could see beyond the commonplace in everything. And because they were using their library daily, rereading some of the old books and adding a new one whenever one worth adding was published, they were constantly discovering something new; their education was still going on.

A NEW family moving into their new farm home are sometimes advised to begin building for the years to come by planting trees about the place. The time or cost of putting in a few trees every year will scarcely be noticed; in a few years they will have given the place a new beauty, a protection against winds and sun; they will have made it a better place to live in every way. For the same reason a new family might be advised to start a library the first year in their new home, and to add a few books every year following. Its influence will develop naturally like the growth of the trees; and will also make the home a more inspiring, more interesting, happier place to live because the people will be more inspired, more interesting and happier.

A farm library should not by any means be given entirely to technical books on agriculture, although there should be a good reference department of agricultural books. Books on soil management, field crops, animal husbandry, feeds and feeding, dairying, orcharding, gardening, etc., should be gathered as fast as one is sure they would be helpful. A list suggested by the Ontario Agricultural College will be published in our Reference Number. In addition to farm books, every farmer should get his name on the list to receive the Government agricultural bulletins, which are published and mailed free. Some system of keeping magazine clippings for reference might also be helpful, although a better plan might be to keep the numbers of any magazine for a year intact and have some way of indexing to help in locating special articles.

IN a library for the whole family, the largest department will naturally be fiction, for while books on special subjects usually appeal to special members of the family, the fiction is read by everyone. The publishers' immense output of fiction every year and the fact that the average novel is a thing to be read once, and not kept for rereading or reference, makes it very easy to overstock a library with books that will soon become both useless and unpopular. Anyone who wants to read every novel as it comes out would do well to get them from a public library if possible, and to put in his own library only those which he has found so good that he wants to own them, either to reread for himself or to lend to someone else. Novels that everyone should read, however, like the works of Scott and Dickens, should be found in every home library. If they are there the children will be almost sure to read them; if they are not there the family will likely grow up without reading them, and afterwards they will discard them for something more modern and in every way inferior. These old standard novels are inexpensive, they may be had in good binding for from thirty-five to fifty cents in the "Everyman's Library" collections, and in spite of the fact that they are old their problems are in many cases quite modern, their stories as thrilling and their style more appealing than the best seller of the season, which will be forgotten in another year. Help a child to know Scott and Dickens and George Eliot and Mark Twain and Victor Hugo and you have done a good deal for his education—it might be safe to say even for his character.

The selection of up-to-date fiction is more difficult because its wearing qualities have not been tested. We have among our modern novels, however, a great deal worthy of living as long as "Oliver Twist" or "Adam Bede." The author's reputation is possibly the best guide we have, but it is not always sure. A certain author's style may perhaps always be good, but his theme uncertain; Galsworthy, for instance, always shows delightful descriptive powers, but if we were choosing a story to leave a wholesome influence, we would take "The Apple Tree" rather than "Beyond," although the latter has been more generally popular. Mary Roberts Rinehart, too, has given us in "The Amazing Interlude" a wonderful story of lasting appeal; the "Diary of a Sub-Deb" has nothing to warrant it a permanent place in a home library. W. J. Locke, H. G. Wells, Conningsby Dawson, Cora Harris, Booth Tarkington, are examples of writers who seem to always keep a pretty constant quality. "The Red Planet," "The Rough Road," "Mr. Britling Sees It Through," "Joan and Peter," "Slaves of Freedom," "The Unknown Country," "The Circuit Riders' Widow," "Penrod," are safe investments for a family library. These are not recommended as an exclusive list, of course, nor necessarily as the best books on the year's lists, but they each deserve a place among the farm home novels. Short stories by O. Henry and the more recent star, Edna Ferber, are also too entertaining and clever to be missed.

WE need more books along lines of sociology, better country life, home ethics, and questions of wider national interest. David Grayson, who writes of the joys and beauties of the open country from the viewpoint of a man who lives there, whose philosophy of country life is as sane and impressive as his descriptions are vivid and his style entertaining, is unknown in many farm homes. His "Adventures in Friendship," "Adventures in Contentment," "The Friendly Road" and "Great Possessions," and his novel, "Hempfield," should be among the first books to go into the farm library. Herbert Quick and Walter Pritchard Eaton are other men whose country life stories should have a place in every farm home.

Passing from books of farm and country life philosophy to questions of national interest we come to books of the war. There must be some hundreds of these, but three at least that will last are "The Soul of the War" by Phillip Gibbs, "Mr. Britling Sees It Through" by H. G. Wells, and "The Glory of the Trenches" by Coningsby Dawson.

It is also a mission of the home library to cultivate an appreciation and love of poetry. Perhaps this can be done better than any other way by starting the young people with a set of Riley's poems. These come in beautifully illustrated sets volumes, "Child Rhymes," "Farm Rhymes," "Songs of Summer," "Songs of Friendship," "Love Lyrics," in cloth binding at the price of sixty-five cents each. While Riley's poems are to be enjoyed by people of all classes and ages, they are ideally fitted to create an interest in and love for poetry in children and others who have never cared for it. Following these we should have the collected poems of all the old standard poets. In the later productions, especially war verse, Rupert Brooke, Allan Segar, Col. McCrae, and Mary Carolyn Davies are to be recommended. There is an excellent book of the Canadian poets edited by Garvin, with photographs and biographical sketches of the various authors.

A list of books of home ethics, homemaking, mother craft, the health-care of the family, food and cooking, and general housekeeping and household administration is given in the list, recommended for circulating farm home libraries, to be quoted in our Reference Number.

And the children's section of the library must not be neglected. The training of the child's imagination cannot begin too young, and it cannot start with anything better than Mother Goose. University professors have claimed that they could tell from the imagination and vividness shown in the compositions of their classics those who had been brought up on Mother Goose Rhymes. The "Oz" Books, Alice in Wonderland, and Andersen's Fairy Tales are other classics that every child should know. A good children's encyclopaedia, entertainingly written and well illustrated, with a variety of Nature Study stories of the impressive and entertaining style of Ernest Seton Thompson's, will give the child such a wholesome, happy outlook on life, such a cue to unravelling and working out other information for himself, that it may do away with a lot of difficult problems of restraint and guidance and discipline later on.

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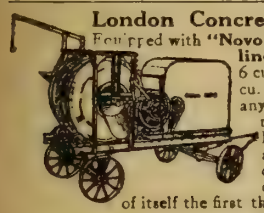

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FAIR PLAY

By Elspeth Wilson

FOWL-LESS dinner tables were in evidence in Sarnia on Christmas day, the outcome of strained conditions between producer and consumer, following an act of the city council in appointing a price committee re farm produce.

Farmers feeling the injustice of it have practically boycotted this market, turning elsewhere with their Christmas fowl where their trade has not been tampered with.

Why not the various merchants of other lines whose prices are exorbitant? is one of the pertinent questions asked.

Remarks heard on the market or street corners prove all too clearly that the breach—always but lightly bridged—between rural and city dwellers has been woefully widened.

Too often the consumers complaining know little or nothing of the cost and labor attendant upon farm production, and view the farmer as a plutocrat. Seeing only the part that goes into the farmer's pocket-book on the market, they ignore the sums invested and annually expended upon up-keep in order that his goods may be presented at high water mark.

Another class—and for these we blush—is comprised of those who have farmed—even as I have—when prices were low and disheartening, but who still succeeded in making good. All honor is due these who so laboriously toiled through years of depression in market prices, but is it fair that they now look with envy upon their successors who to-day reap prices for which we longed? Instead of rejoicing that the farmer has at last come into his own and can set his own price—they grouch. Were they to-day in the farmers' shoes how many of them would reject top-notch prices? Why not live and let live?" for if the consumer pays high are not his pay cheques correspondingly increased? Surely the farmer is not the only one seeking highest prices.

GENERAL REMINDERS

Have you wrapped your young apple trees against mice?

No use praying for clean stock unless we use the sprayer.

A good cat in the barn will pay for her milk-breakfasts in saved grain.

Exercise is essential for the breeding stock and working horses.

What about your responsibility for the social life of your own neighborhood?

If dampness gathers on the walls of your poultry press, watch out.

January is a good time to haul out the manure on to the apple orchard.

Do not forget to subscribe for your farm papers and send in the subscriptions.

A thermometer is mighty useful on the farm, and will easily save its price.

Watch the root pits, that there is plenty of ventilation.

Did you overlook greasing the wearing surfaces of all your machinery?

WITH THE SHEEP

A turnip a day per sheep this month will be all right.

Better separate the rams from the flock.

It looks now as if wool and mutton were going to continue in demand.

Sheep need plenty of exercise and they ought to be in the sunshine as much as possible.

Feed plenty of salt—a preparation of worm eradicator is often good to be mixed with it.

If a sheep is ailing, separate her from the flock.

Read the range sheep article in this issue. Rambouillets are coming into Canada.

Even at lower prices sheep are going to be paying property on the farms.

Growers of Cotswold, Lincoln and Leicester sheep should see that their wools are not penalized by the graders this year.

Our Government should leave no stone unturned to see that Canadian wools got the prominence they deserve.

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Why Feed Water
Instead of Corn?

MANY dairymen are noticing the poor feeding quality of silage made from tall green corn grown last summer.

Here are actual Quality Figures for Corn at three stages:

Weight in 10,000 plants (about ½ acre)

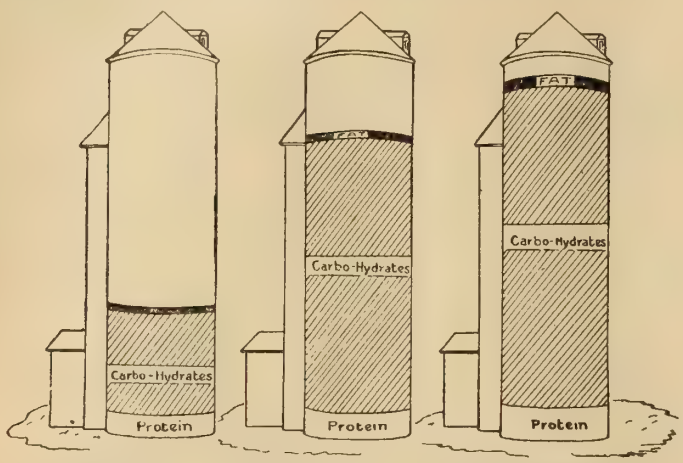
Corn Plant	Protein	Starch and Carbohydrates	Fat
(1) When Silks are dry	436 lbs.	2942 lbs.	49 lbs.
(2) Ears formed, Kernels glazing	566 lbs.	7884 lbs.	202 lbs.
(3) Corn ripe for Ensilage	659 lbs.	9268 lbs.	215 lbs.

Purdue Agricultural Experimental Station—Bulletin 175

New York (Geneva) Station reports that the corn crop increases in weight about 10,000 lbs. per acre between tasselling and maturity.

Experience shows that you can hasten corn ripening from 10 days to 2 weeks by proper Fertilizing.

These silos with their contents show the relative feeding value of green, partly mature and mature corn ensilage figured on the basis of an equal number of corn plants in each silo.



Corn just past silking stage when frost came — Kernels of Corn glazed when frost came — Ears well formed, corn sufficiently ripe for good silage when frost came

You can increase the protein in the silage from 30% to 50% and the Carbohydrates and starch from 168% to 215% by forcing the corn to maturity.

Balance the manure on the corn next summer with 200 to 300 lbs. Acid Phosphate per acre. If you haven't manure for the corn field use 200 to 300 lbs. of complete fertilizer per acre.

Fertilizers pay in Better Silage Corn. *Write for free literature.*

Soil and Crop Improvement Bureau
of the Canadian Fertilizer Association
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20

A Woman Gifted for Country Life

Continued from page 13

help me put in the garden and we hoe all over the fields together. This is what has developed a delicate hundred-and-fourteen-pound girl into a robust hundred-and-sixty-pound woman."

And this work is governed always by a fine intelligence; she is the last woman in the world to blindly accept drudgery if a better way can be found. A gasoline engine is being put in her back kitchen to run the cream separator and churn and washing-machine. That is something machinery can do; the work out of doors is a delight to her because she loves the sun and the air, because every farm animal is a pet to her and every plant a living thing. In the summer she has a work-table set out in the shade of the trees that make the house grounds a paradise of shade and coolness and birdsong. And the influence of the out-of-doors shows in her whole personality. It is not only that it has developed the frail little music-teacher from a delicate thirty-four to a perfect forty-two. There is a serenity, a poise, a sweetness, a freedom from nervousness or affectation that only living close to Nature can give.

IT would not be surprising if a woman as busy as this with a family to take care of could not find time to give to outside community work, but Mrs. Patterson has always made time to help wherever she was needed. She is a leader in almost every community movement now, but it wasn't always easy. She believes that when she first came to the neighborhood she was about the timidest woman who ever had to force herself into public service. It was the minister in the church who first drew her out. The church had bought a new organ, and the minister said to her, "We're depending on you to help us."

"The first morning I played," she said, "I actually turned blind with nervousness. Of course at that time I hadn't very good health. It would take something enormous to give me that feeling now."

Just before the war began she joined the Women's Institute. The second year she was made president of the district, and the practical efficiency methods that had taught her how to make soap in four hours, and to pick geese in one-tenth of the usual time, were responsible for a marvellous speeding up of Red Cross work. The women of the Institutes in her district were busy farm women like herself—most of them helping with the work of the farm as well as doing all their own work in the house; it was impossible for them to find much time for knitting, so, naturally, she thought of a knitting-machine. None of them had ever used a knitting machine, but if she thought it would be all right they were willing to risk getting one.

"We thought," she said, "if a machine could knit a sock in fifteen minutes, it wasn't good economy for a woman to spend a day doing it."

The machine arrived late on Saturday night, "I don't know whether I did wrong or not," Mrs. Patterson confessed, "but we had to start to use it on Monday and there seemed to be nothing to do but to go to work on Sunday and learn to run it. I had a book of directions, and I worked all day Sunday until I mastered it."

Six knitting machines were bought for the use of the Institutes in the district. They did all the Red Cross knitting and an arrangement was made to let each Institute member borrow a machine for two weeks to do her family knitting for the year. Mrs. Patterson tells many stories of how helpful the knitting-machine was to different families. An incident in her own case is rather interesting. This was after some extra patriotic work had made some new demands on her time. Her husband was going to town the next day and in the evening he remarked: "You've been on the road so much lately, I think you had better look into my socks. I don't believe I have a whole pair to wear to-morrow."

"I looked," she said, "and he hadn't. This was at six o'clock. I sat right down and ravelled out the legs of one pair, cut the feet off another pair, put the legs on the machine and knit on new feet. By nine o'clock, I had them washed and ready for him to put on his feet in the morning. Now where would I have been if I'd had to foot those socks by hand?"

When it was decided to open a Red Cross Canning Centre in Stratford last fall, the Women's Institutes of the district took over the responsibility of finding funds and supplies to carry on the work and Mrs. Patterson was made head of the committee. It meant raising over seven hundred dollars and enough material to keep the canning factory running for four months. While the epidemic of influenza was at its worst in Stratford they turned the factory into a hospital kitchen to cook for the families who were all ill and couldn't get help. With all this she is never too busy to help with especial church music or to throw her house open for a church social—in fact there are certain doors between rooms hung so they can be lifted off to give more space for such gatherings.

ONE of the delightful things about the Patterson home is that it is a musical home. The mother has not only have also been given the best opportunities. They have a glorious family orchestra and when the young people of the neighborhood drop in in the evening they are Presbyterian enough to push the kitchen table to the wall and dance. With consideration for this they have never put a linoleum on the kitchen floor.

"Often in the evening of a hot busy day in the summer," Mrs. Patterson said, "when we were really too tired to go to sleep someone would sit down at the piano intending just to play a few chords, the rest would drop in one after another and we would probably be there for two hours. Then we could go off to bed rested and sleep whereas we would otherwise have lain awake for hours."

The orchestra usually consists of the piano, violin, and harp. Mrs. Patterson had never studied the violin, though her father was a rather accomplished player. "Where I really got my inspiration for the violin," she remarked, "was at a Women's Institute Convention at London four years ago. In the evening Lady Beck sang in a beautiful contralto to the accompaniment of the piano and a violin obligato. I had never heard anything so heavenly as that violin. My daughter was clamoring for a violin at that time and I came home and got her one."

Of course to the woman who is the moving spirit there seems nothing out of the ordinary in all this—it is just her way of living. Only it seems a very happy, well-balanced, rather an ideal way.

WHEN A CHILD IS DISOBEDIENT

Continued from page 18

prison." She describes her now-adult son to have been a child who was mentally alert, spirited, surcharged with physical energy—all excellent qualities. "But his father was always at him," writes the mother. The boy's slightest offense—his noisy playing, his unexpected laugh, his lateness to a meal, his refusal of a request—was always met by the father with punishment and severest rebuke. The result was that

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the spirited boy, provoked to rebellion, allied himself with a gang of boys of the wildest type—and to-day is paying the penalty of his father-engendered recklessness by a long sentence behind the bars.

"But do you believe in physical punishment in any case?" people ask me. "If not, what do you suggest as a substitute?"

One fundamental objection that I have to physical punishment is that it does not really "punish"—for the true object of punishment is not to inflict revenge, but to awaken the child to a sense of his fault, and to arouse in him the desire and determination to do better. Corporal punishment rarely does this. One sometimes hears adults speak of childhood whippings which did them good. Perhaps such people are right, to some extent; but it is likely that they would have been more improved if some other method of discipline had been used.

As a substitute for corporal punishment, which begets only physical pain, and with it, usually, a corroding desire for revenge, I would suggest punishment which is aimed at the child's mind, imagination, emotions, desires. Punishment, to be effective and constructive, and to help develop the child's will, must be something which the child recognizes could have been avoided by the exercise of his will.

OF course any such punishment will have to be varied according to the nature of the child; and that is one reason why the parent must carefully study the child before undertaking any action. Perhaps one instance will make clear what I mean by punishment of this kind. A little girl of six, whose unbridled wilfulness I was trying to correct, had a supreme desire for a ring. An inexpensive ring was given to her, with what she knew was very great love; and it was given to her not as a bribe or a reward, but was expressly given her as a reminder that she should control her will. Further, it was given with her understanding and consent that if she failed to control herself the ring would be forfeited. On the first offense she was to give up the ring for three days; on th second offense, for a week; and on the third she was to lose it altogether. The girl realized that the mother's effort was not to get her to forfeit the ring, but to help her keep it; and she realized that if she lost the ring, only herself would be to blame. She responded at once to this responsibility which had been put upon her. She did her best to control herself; but it was hard, and after a period of happy calm she gave way to one of her fits. Her grief was tragic when she had to take her ring from her finger and give it over; but she understood the conditions and unhesitatingly complied, without the least trace of black feeling against her mother, and blaming herself alone for the punishment which she suffered. She won the ring back by a period of self-control, then had another wilful fit, lost it again, and after a hard struggle regained it once more. She still possesses the ring—and possesses it, as she clearly recognizes, because she has managed to keep herself under control. This experience at self-punishment and self-control has been a profound lesson to her, and has been a very definite source of development.

We want no parental autocrats in the home, and we want no childish subjects. For best results we want the nearest possible approach to pure democracy. The ultimate purpose of obedience, of thoughtful discipline, of just and kindly punishment (inflicted by the child itself whenever possible) is the establishment of such respect and understanding and harmony between the child and its parents that friction and irritation will be removed, that "obedience," in its old rigid sense, will become undesirable and obsolete, and that "punishment" inflicted by one in authority will cease to be. The child's will-power will then have a free and rounded development, with the result that it will be a splendid driving-energy for happiness and achievement which will be always under a perfect self-control.

Women's Institute Convention Technical School, Toronto

PROGRAMME

TUESDAY, FEB. 4, 1919

Afternoon

Presiding—Dr. Margaret Patterson, Toronto.

2.00—Address of welcome, Lady Hearst. Reply, Miss E. E. Haycraft, Bowmanville.

2.30—Branch reports — Discussion following each report.

3.00—Report for the year, Geo. A. Putnam, Superintendent of Institutes. Discussion of report.

3.30—Patriotic work: (a) Women's part in the war, and their present responsibilities and opportunities—Col. Noel Marshall, Chairman Can. Red Cross Soc.

3.45—Intermission—Fifteen minutes.

4.00—The Institute—Mrs. Hobberlin. Port Credit. Encouraging and Extending the Institute, Mrs. L. C. Burns, Caledonia. General discussion. Appointing of committee on nominations.

Evening

7.30—Patriotic song service; singing led by soldiers under Captain Hunter. Address by returned prisoner of war. Solo. Address by returned soldier. National Anthem.

WEDNESDAY, FEB. 5th, 1919.

Morning

Presiding — Mrs. James Pearson, Schomberg.

"O Canada."

9.30—Branch reports; discussion following each. Demonstration lecture courses: (a) Domestic science; (b) home nursing; (c) sewing. Discussion of district work: (a) an extension of work, East Simcoe and S. Oxford; (b) district annual meeting, Prince Edward and E. York; (c) duties and responsibilities of district offices, Dufferin and Haldimand.

Intermission.

Girls' work—Miss K. F. McIntosh, Brampton. Report on what the girls are doing: Clavering, Springford and Matheson.

11.15—Housing problem—Prof. C. B. Sissons, Secretary Housing Commission, Toronto.

Afternoon

Presiding—Mrs. G. T. Wood, Grandview.

2.00—Canning centres: (a) organization, Mrs. D. C. Wilson, Parkhill; (b) equipment, Mrs. P. E. Culverhouse, Vineland; (c) "My Visit to the Canning Centres," Miss E. M. Chapman. Toronto. "Shall We Continue War-Time Diet"—Discussion led by Miss Kate McKay, Beaverton.

3.00—Medical inspection. (a) address, Dr. McKenzie Smith, Gravenhurst; (b) organization of the district, Lincoln County; (c) the responsibility of the branch institute, St. George Institute; (d) follow-up work, Miss H. Graydon, Streetsville, and Miss E. Harcourt, Toronto; (e) clinics, Mrs. H. Drinkwater, Streetsville.

4.00—Physical development — Dr. Margaret Patterson, Toronto.

Evening

Presiding — Dr. G. C. Creelman. Branch report. Solo. Address—Hon H. J. Cody, M.A., D.D., LL.D., Minister of Education.

THURSDAY, FEB. 6th

Morning

Presiding—Mrs. Geo. Smith, Delhi.

9.30—General discussion.

Millions Are Lost on Breakfasts

Which Cost 10 Times Too Much

Compare the cost of other breakfasts with the cost of Quaker Oats.

Compare the cost per calory, the measure of energy value.

You will find that meats, eggs, fish, etc., run 8 to 16 times the cost of Quaker Oats.

Why do you pay that multiplied cost when Quaker Oats is known to be vastly better food?

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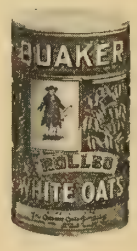

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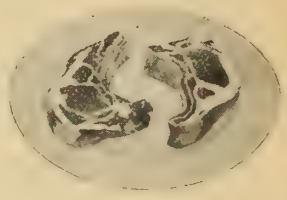

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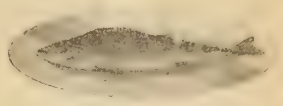

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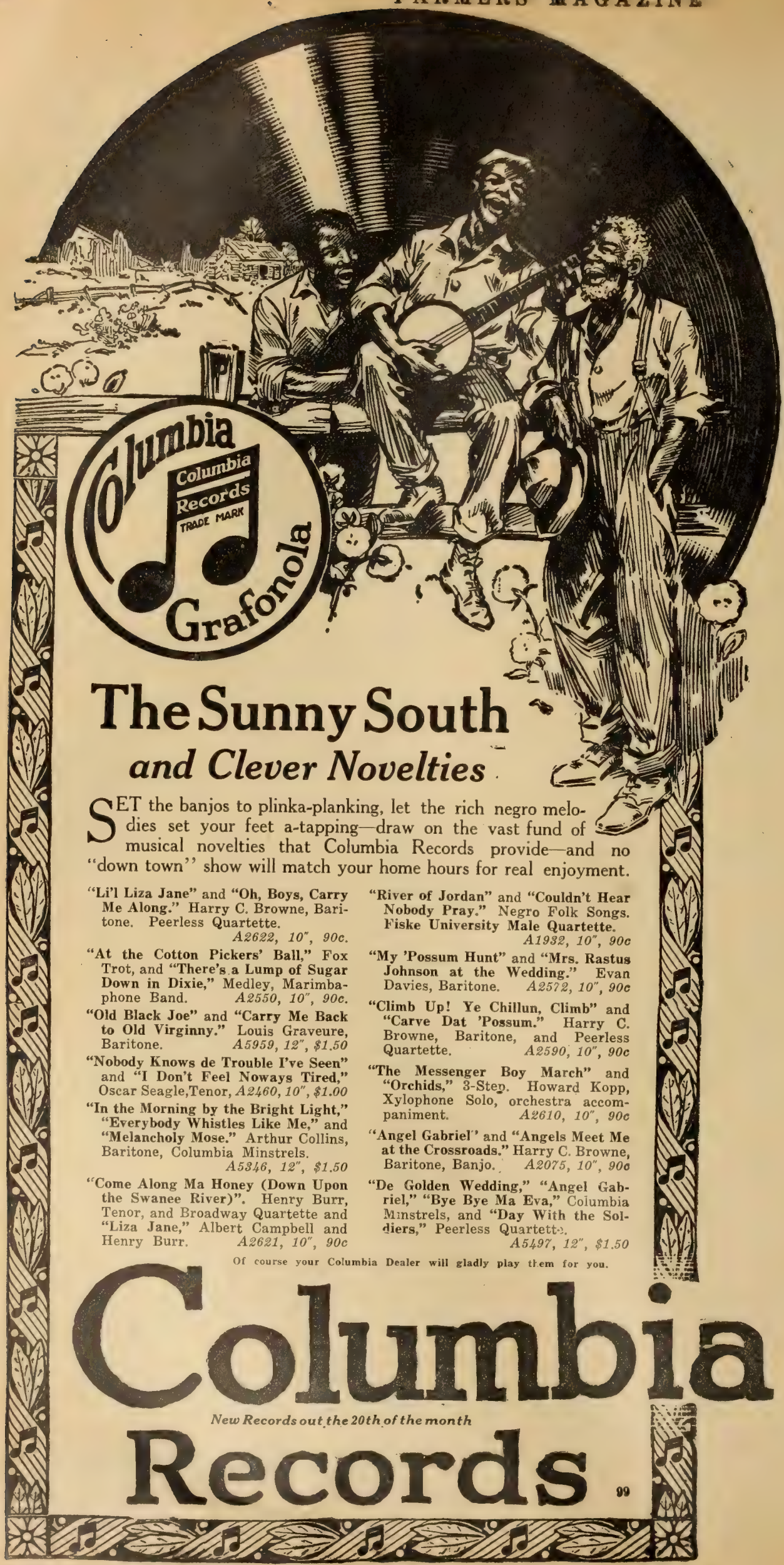

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"Old Black Joe" and **"Carry Me Back to Old Virginny."** Louis Graveure, Baritone. *A5959, 12", $1.50*

"Nobody Knows de Trouble I've Seen" and **"I Don't Feel Noways Tired,"** Oscar Seagle, Tenor, *A2460, 10", $1.00*

"In the Morning by the Bright Light," "Everybody Whistles Like Me," and **"Melancholy Mose."** Arthur Collins, Baritone, Columbia Minstrels. *A5346, 12", $1.50*

"Come Along Ma Honey (Down Upon the Swanee River)". Henry Burr, Tenor, and Broadway Quartette and **"Liza Jane,"** Albert Campbell and Henry Burr. *A2621, 10", 90c*

"River of Jordan" and **"Couldn't Hear Nobody Pray."** Negro Folk Songs. **Fiske University Male Quartette.** *A1932, 10", 90c*

"My 'Possum Hunt" and **"Mrs. Rastus Johnson at the Wedding."** Evan Davies, Baritone. *A2572, 10", 90c*

"Climb Up! Ye Chillun, Climb" and **"Carve Dat 'Possum."** Harry C. Browne, Baritone, and Peerless Quartette. *A2590, 10", 90c*

"The Messenger Boy March" and **"Orchids,"** 3-Step. Howard Kopp, Xylophone Solo, orchestra accompaniment. *A2610, 10", 90c*

"Angel Gabriel" and **"Angels Meet Me at the Crossroads."** Harry C. Browne, Baritone, Banjo. *A2075, 10", 90c*

"De Golden Wedding," "Angel Gabriel," "Bye Bye Ma Eva," Columbia Minstrels, and **"Day With the Soldiers,"** Peerless Quartette. *A5497, 12", $1.50*

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10.00—Report for Eastern Ontario—Miss M. E. Pearson, Merrickville. Report for Western Ontario—Dr. Annie Backus, Aylmer. Report for Thunder Bay, Rainy River, and Kenora—Mrs. B. O. Allen, Fort William. Women's work on the farm: (a) what the farm women are doing—Mrs. J. Patterson, Gadshill; (b) the needs for 1919—Dr. W. A. Riddell, Director of Labor Bureau, Toronto.

11.00—The hot lunch for rural schools—Mr. A. H. Leake, Inspector of Manual Training and Household Science. Provincial organization of the institutes. Resolutions. Report of committee on nominations.

Afternoon

Demonstrations, exhibits and literature bearing upon activities in the interests of returned men will occupy the afternoon. Full announcement of programme will be made on the first day of the convention.

CAPITAL IN DAIRY BUSINESS

THE total value of the capital invested in the creameries and cheese factories of Canada in 1917 was $19,628,000. The number of employees was 10,346 and their salaries and wages amounted to $5,446,446. The amount paid to patrons was $73,873,245 and the total expenditure, including fuel, $834,036, materials $3,844,698 and miscellaneous expenses $2,498,334, was $86,496,759. In addition to the value of the production of butter and cheese, other products were manufactured to the value of $18,424,485; so that the total value of the products of dairy factories in 1917 amounted to $93,822,236.

FACTORY CHEESE

THE total production of factory cheese in Canada in 1917 was 194,904,336 lbs., value $41,170,563, as compared with 192,968,597 lbs., value $35,512,622 in 1916 and 183,887,837 lbs., value $27,097,176 in 1915. Ontario and Quebec together produce 97 p.c. of the total factory-made cheese in Canada. In Ontario the quantity produced in 1917 was 121,173,086 lbs., value $25,771,944, as compared with 126,015,870 lbs., value $23,312,935 in 1916, and 125,001,136 lbs., value $18,831,413 in 1915. The average wholesale price of factory-made cheese for Canada was for 1917 21 cents per lb., as compared with 18 cents in 1916, and 15 cents in 1915. For 1917 the highest price per lb. was in British Columbia, 30 cents, and in the other provinces the average price was close to 20 or 21 cents per lb.

MRS. PARSONS MANUAL FOR WOMENS' MEETINGS

THERE has long been a marked need in Canada for a book which, in plain language, shall tell any woman how to conduct herself anywhere at any meeting. There have been various manuals and books of procedure from which a woman who was very much in earnest might be able to find what she wanted. For the average woman, however, who was but little used to procedure in a public meeting, there was no handbook to which she could quickly and readily refer and find her questions answered in simple but definite language in an absolutely authoritative manner.

The beauty of this manual of Mrs. Parsons' is that it is just as useful for the ordinary member as for the official. Already a number of large women's organizations have taken it up and are purchasing copies to place in the hands of each of their members. Published in stiff paper covers at 50 cents, in cloth at 75 cents, and limp leather at $1.00. The Macmillan Co. of Canada.

Burford, Ont., R. R., No. 1.

We have been taking the FARMERS' MAGAZINE *for over a year now and we think it is the only paper for a farmer.*
Roy Priest.

Western Pioneer Hints

By CHINOOK

OPTIMISM is a predominant characteristic of homesteaders. It is a fine quality, but when overdeveloped it leads the pioneer to attempt more than he can well accomplish. This applies to work as well as to financing. To one whose enthusiasm is yet untempered by experience it may not seem much of a proposition to "throw up" a log house and stable, "bust" ten acres, "scoop out" a well, put up a few loads of wild hay, etc. The real thing surprises him with its various obstacles and hold-backs.

Nearly every operation takes longer than the newcomer expected, and there are unthought-of preliminaries to each one. The building logs must be first located, then cut, hauled, possibly hewed and laid up. The house is then nicely commenced. Floors, windows, doors, roof, chinking of walls and other details spoil from a week to a month, depending upon the size and the builder's help and experience. I omitted to mention that before the logs are cut a permit is supposed to have been obtained. In practice this regulation is frequently honored in the breach rather than in the observance. Lines must be run before fencing can be done, and this often necessitates considerable "brushing." A spot must be picked for the breaking and this may involve some "grubbing"—the bete noir of the homesteader. Rainy days and trips to the blacksmith shop interrupt the plowing. Quite often winter finds the house unfinished, about half the first year's quota of breaking done, the stock standing tied to a fence on the lee side of the stack, or else seeking scrub shelter, and water being hauled from a creek or a neighbor's spring.

It is far from our purpose to counsel indolence. The average homesteader needs to hustle if he is to make good. But there is more profit in the hustling if one is keeping his work in hand rather than being driven by it. Be conservative in undertaking; energetic in execution. Attempt about half what you think you should be able to do.

Many a homesteader takes too much truck along with him, and it is an encumbrance for years to come.? Sell or leave with a friend for a while the good furniture—all, indeed, but the barest essentials of kitchen equipment, clothing and beds. Just a word of experience here: When we came West we yielded to the temptation to bring a carload of stuff to the nearest city, intending to sell the surplus there. Hard times prevented sale except at heavy sacrifice. We stored most of the stuff at a cost of fifty dollars per annum plus high insurance and eventually moved it over a two-hundred-and-fifty-mile trail at a cost of three dollars per cwt. On arrival, some of it was stored for a time under a tent, then shifted to a neighbor's shack, and finally to our own home. What with storage, freight, insurance and handling it cost us the best part of its original value. It is not a unique experience. I have known men to be moving off and on for years. The homesteader has responsibilities and expenses enough without adding a single unnecessary one.

What has been said of furniture applies also to livestock. Cruelty and loss are very liable to attend the taking in of a lot of animals before one is ready for them. Being ready implies having an adequate supply of water, feed and shelter definitely assured. In the absence of that, the new comer will usually do well to limit his ark to a working team or two, a family cow, a few chickens, and perhaps a brood sow. And it is not always wise to take even that much. Circumstances govern.

Too Many Jobs on the Go

"The trouble with X," remarked one homesteader of another in our hearing the other day, "is that he never finishes anything. He will start to build a fence, do a little at it, then haul a few building logs, or a load of feed, and so on from one thing to another. He always has two dozen jobs on the go."

The error criticized above is a natural one for a pioneer to fall into. It leads to a chaotic condition of work where one never knows just what to tackle next. In the midst of twenty unfinished tasks he is likely as not to lie abed of a cold morning or sit by the fire of a rainy day in a nonplussed, undecided frame of mind while the odd jobs multiply and unfinished ones remain undone.

It is not always expedient to complete every job before tackling another. Some, like seeding, breaking, haying and harvest, call imperatively for punctual attention, while certain others may well await the farmer's convenience. But beware of drifting into the habit of switching off in hesitant, whimsical fashion. I have a tendency that way myself and speak from experience, more or less. I have come to realize, however, that unnecessary changing of jobs is baffling and wasteful of time and for the past couple of years, particularly, have been making a point of self-discipline on this line, with results that are beneficial. When undecided which of two jobs to go at I settle it by completing the unfinished one first, or by carrying out original intentions. "One thing at a time. Concentrate."

Every little while I pause to jot down a list of odd jobs to be attended to, often rewriting it in order of precedence. I put this list in my pocket or lay it away in the desk, and as opportunity permits we attend to those jobs one after another in turn, or as near that as weather and other conditions allow. Each one as completed is checked off the list and there is a rare satisfaction in seeing a formidable program of duties gradually polished off the slate. Of course, new jobs keep piling up to be set down on fresh lists, but that is not bad so long as one is steadily wading through the work instead of leaving it littered helter-skelter in unfinished chaos all around him.

Pay as you go. Live within your means. Be cautious in undertaking work, energetic in doing it. Concentrate on one thing at a time. These seem to me sound maxims, the observance of which makes for thrift, happiness and success.

Fish Meal as a Livestock Food

In these days anything that will increase the available quantities of cattle food without decreasing the quality is of immense value. Experiments have proven that this is possible with fish meal, a foodstuff that as yet is little known in this country, but which is used extensively in Europe. Fish meal should not be confounded with "fish scrap," "guano," or "pomace," or other forms of fish by-products used as fertilizers. The fish meal used is more carefully treated and includes, or should include, only fresh, sound fish, or fish offal. The value of fish meal as a cattle food is explicitly set forth in four-page pamphlet No. 17, issued by the Department of Agriculture, Ottawa, and which can be had free on application to the Publication Branch. Results of experiments made at the Central Experimental Farm show that fish meal, where available, is a suitable concentrate for cattle, sheep and hogs; that fish meal contains 55 per cent. to 60 per cent. of protein, and over 15 per cent. phosphate of lime; that if of good quality and properly fed with other meals and with roughages, it is palatable, wholesome, and a good feed for young growing stock and also for milk production; and that if given a fair trial and used in proper proportions it should become one of the most popular and profitable protein supplements for swine feeding.

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contents are carefully consored—no sex stories—you can take it into your home with the utmost confidence.

A word about the contents—

"Why Laurier Will Wait"

In discussing the policy of the Liberal leader during the coming session of Parliament, J. K. Munro predicts, in January MACLEAN'S, that Laurier will allow Union Government a free hand. In this policy of inactivity "he sees the way open to the accomplishment of all his purposes. If he is half the politician his friends believe he is, he will sit and smile and wait—yet a little longer."

All Canada is interested in what is going to happen in Ottawa. J. K. Munro, veteran press gallery man, is a shrewd observer, and his political articles in MACLEAN'S have stirred up more comment than anything else appearing in the press of the country. He knows politics from the inside. "Why Laurier will Wait" is a forecast of the near future that bristles with interesting points.

A few of the other "head-liners" in this issue:

Bolsheviks at Work in Canada

A sensational article on activities in subterranean circles. There are foreigners in Canada ready to wave the red flag.

Achievements of the Canadian Army

Since the Canadian Division was formed, they have not retired a foot nor lost a gun—a marvellous record. An inside story of how this great army was handled and controlled is told by H. F. Gadsby who spent a month at Headquarters during the last great offensive.

The Grave Dangers of Peace

An article by Agnes C. Laut on the insidious new propaganda being launched by the Germans to split the Allies.

Jock in a Juggernaut

The most interesting war article in a long while, because it is new—it deals with experiences in the tanks.

AND THESE AS WELL

The Dance Halls of Dawson - - By E. Ward Smith
My Hour - - - - - By Robert W. Service
The Strange Adventure of a Rialto Rainstorm - - - By Arthur Stringer
Old Times in Canada - - - - By Walt Mason
The Minx Goes to the Front - By C. N. and A. M. Williamson
The Three Sapphires - - - - By W. A. Fraser
Mr. Craighouse, of New York, Satirist - - - - - By Arthur Beverley Baxter
The Intercepting Spark - By Mary Josephine Benson

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SOME FARM VIEWS

Is Your Farm One Hundred Per Cent

By JOHN JACKSON

IF your farm is not one hundred per cent. productive can you tell the reason why? You are not asked to make a guess about it, but to state clearly and truthfully for your own benefit why you are letting the profits slip by you. For instance, there is no reason in the world why the average farm should not produce at least fifty-five bushels of oats per acre. Why is yours producing but thirty-five to forty bushels per acre, during the years of good yield and a great deal below that for the poorer years? Surely it is time to stop up that hole in the pocket.

Let me tell you what I found out when I went at my farm in dead earnest in this respect.

First of all I found out that my crop in one field was below the average. Through this fifteen acre field there ran a spring and fall creek. This creek did not take shape till late in October and it generally dried up by the middle of May or the first of June. Moreover, it was not straight by any means, but it managed by its wandering course to cut out of my field a space about three rods wide. The creek-bed was about a rod wide and on each side of it there was about another rod that was not up to much because of the creek's wandering course. I made up my mind that the creek had to be straightened. There was some work ahead but finally the job was done and now a fine ditch that carries off all the surface water that runs through the field during the spring and fall. Being as straight as a line it is but four feet wide and we can crop the land to a foot on each side of it. In this way we have added a strip to that field about forty-four feet wide and thirty rods long. Not only has there been a gain in the land under cultivation, but the land lying adjacent to the ditch is so much improved in drainage that the crop production on more than an acre of the field is increased by fully thirty per cent.

I noticed, too, that the knolls on the field were not up to much in the way of production. The soil on those high places was stripped of its humus and the grain that grew there was in consequence spindly in the straw and poor in the kernel. But while there was little humus on the knolls, there was an over supply in the hollow where the rain had carried what was washed from the hills. Further, the knolls rarely gave us anything more that the merest excuse for a crop of clover. The method we adopted was to plow the knolls as well as we could as soon as the harvest was off. The next step was to place a few wagon loads of the soil from the hollows on the earth thus loosened. This was followed by the plowing of the entire field at its regular after harvest plowing. By the time the last deep fall plowing was done the knolls were well supplied with humus that was throughly mixed with the ordinary stiff clay. Not only so but the shape of the knoll was so altered and the texture of the soil so changed that the rain instead of running off the knolls sank into the soil. By this treatment we secured the first year a very considerable addition to the productiveness of the field. The crop was even and good. Half a day's hustle made the difference. One has only to add that clover now grows on those knolls as well as it grows on the rest of the field. The new soil from the hollows brought with it the inoculation and the other things the knolls lacked for this growth. Each field on the farm had some limitation that kept us back from ten to twenty per cent. The limitation was not in evidence till we looked for it. What astonished us was our folly in working under the handicap when it was so easily removed.

HOW TO LOCATE THE FARMSTEAD

By A. H. Benton

THE farmstead has two uses: it is both a home for the farmer and his family and a business centre for directing farm operations. In selecting a site for the farmstead, these two points of view should be considered. In this connection there are always some features which stand forth as important.

1. An abundant supply of water suitable both for the home and livestock.
2. Distance from main travelled roads, markets, schools and churches.
3. Healthfulness of location—a high and well drained spot is desirable.
4. Shelter from north and west winds—east or south exposure is desirable with a wind break on the west and north to catch the snow and break the sweep of the wind.
5. Easy access to the fields of the farm.

From the social point of view the most desirable location is on the main travelled road, close to churches, schools and markets. From the business point of view the most economical location is in the centre of the farm where all fields are usually most accessible. The ideal location is one where all advantages are secured from the point of view of home and business. This is rarely possible and it is better to plan for a satisfactory home at the sacrifice of some of the farm business advantages.

CHURCH CONSOLIDATION

By Thos. Smith

IN the October number of this magazine there was a very interesting and instructive article on school consolidation, which should make a deep impression on the farmers of Canada. It is my purpose to deal very briefly with a kindred question, namely: Church Consolidation. Every individual who has the welfare of his country at heart must face the many problems that rural life presents to-day. School consolidation will help to solve many of the educational and social problems, and we believe that it is something that must come in the near future. We also believe that church consolidation is a great necessity and is bound to come sooner or later. To-day we find little churches scattered all over the country. Some places only two miles apart of the same denomination, and in the villages we frequently see two or three different churches where there are hardly enough people for one good congregation. The people are striving to keep all these churches going, but any one of them at its best is not any more than half as prosperous as we would like to see it. Many of the churches are dead because there are not enough people in the neighborhood to keep things alive and interesting, thus we cannot blame some families for not going to church at all. The modern church must be made sufficiently interesting and attractive so

Every farm boy is proud when he produces crops

that the people will be drawn to it. The minister may do his best, but he cannot make the present country church attractive for those who do not now attend.

Another very arduous proposition in rural church work to-day is the Sunday School and young people's society, because the country is not blessed with large families as they were a few years ago, and the few children who now attend soon grow weary because there is very little which appeals to them. Then it is a difficult matter to secure capable teachers with only a few people to choose from.

Unfortunately there are few singers in the country, and the task of keeping a choir going has become so laborious that many of the churches have given it up entirely.

The question is asked, in what way can we better these conditions? We can only better them by forming larger communities and having one centre for religious and educational enterprise. Shall we say one church in every ten miles square? The people could come in for five miles around to-day with their automobiles as easily as they could go one mile in the old days with the horse or on foot. Let it be the only church, and the only denomination in that community, or shall we say a union church? There could be held either one or two services on the Sabbath day. The average congregation would be between two to five hundred. It would be easy to select a number of good singers and form a choir equal to that of any town or city church. The church could be built modern and the services made very attractive. Sunday School could be held after the service, as it is in many towns to-day. It is easy to see the inspiration that there would be in having a Sunday School of one hundred and fifty or two hundred children and the difficulty in securing suitable teachers would also be solved. The church could be made a great social centre, and young people's societies could be held during the week. The young people would become interested in their church and the country life, and would not have the same isolated feeling when at home on the farm. It would also take away the passion for large centres of social and industrial activities.

Now I am quite aware of the troubles that are before us in trying to put these ideas into practice. The fact is that farmers are slow to try any new idea, and very hard to convince that it is feasible. And again very few farmers intend spending all their life on the farm—they look forward to the day when they will be able to retire in some town. But they should be willing to sacrifice considerably to give their children advantages which they have not had themselves; and—

"Measure thy life by loss and not by gain;
Not by the wine drunk but by the wine poured out;
For love's strength standeth in love's sacrifice,
And he who giveth most hath most to give."

Manitoba to Buy Stallions

IN order to improve the stock of Manitoba and, in so far as possible, bring within easy reach of every breeder, stallions that will sire good marketable horses, the Manitoba Department of Agriculture will undertake the selection and purchase of stallions of the respective draft breeds required, and will sell same at actual cost to *bona fide* residents of Manitoba, to be used for breeding purposes within the province.

Only sound animals of good breeding and individual merit will be considered.

Horses purchased will be placed on exhibition at some convenient point in the Province, where they may be inspected by prospective purchasers at least six weeks before the breeding season commences.

In order that the department may be informed as to the requirements of the province in this regard, it is important that those who contemplate the purchase of a stallion for the next breeding season should at once communicate with the Manitoba Department of Agriculture.

Soldiers Home Coming Campaign

War Work and After-War Work of the

SALVATION ARMY

"FIRST TO SERVE—LAST TO APPEAL"

The Salvation Army has for 53 years been organized on a military basis—inured to hardship, sacrifice and service. It is always in action, day and night.

It has maintained Military Huts, Hostels and Rest Rooms, providing food and rest for tens of thousands of soldiers each day. 1,200 uniformed workers and 45 ambulances have been in service at the front—in addition to taking care of the needs of soldiers' families here at home, assisting the widows and orphans, and relieving distress arising from the absence of the soldier head of the family.

Notwithstanding all the Government is planning to do, notwithstanding the pensions and the relief work of other organizations, hundreds of cases of urgent human need are constantly demanding the practical help the Salvation Army is trained and equipped to render.

The Salvation Army Million Dollar Fund

January 19th to 25th

While it could do so, the Salvation Army has carried on without any general appeal. Now the crisis is arising with the return of the 300,000 soldiers. The budget for essential work during the coming year has been prepared. A million dollars must be raised to continue the after-the-war activities, which include:

Hostels for Soldiers

Salvation Army Hostels are vitally necessary for the protection and comfort of the soldier at the many stopping places between France and his home here in Canada. These Hostels—or military hotels—provide good food, clean beds, wholesome entertainment at a price the soldier can afford to pay. If the boys did not have a Hostel to go to, WHERE would they go?

Care of the Wives, Widows, Dependents and Orphans of Soldiers

Scores and hundreds of cases could be cited where soldiers overseas have been comforted by the assurance that the Salvation Army has stepped in to relieve their families from dire need. As an instance, a mother with six children is located—no fuel, weather freezing, food and funds exhausted by sickness and other troubles. They are taken to Salvation Army Emergency Receiving Home. Winter and 300,000 soldiers returning increase the demands on the Salvation Army, whose personal help alone is of avail. Consider, too, the vast and complex problems arising out of the care of soldiers' widows and orphans.

Keeping the Family Unit Intact

The women of the Salvation Army on their visiting rounds accomplish the apparently impossible. Is the discharged soldier out of a job? They find him one. Is the wife sick, the home-work piling up, the children neglected? They nurse the wife, mother the children, wash and scrub. Is there urgent need for food, fuel, clothes or medicine? They are supplied. It takes money, of course, but more important is the loving spirit of service in which the work is done.

When the Soldier Needs a Friend

The Salvation Army Lassie provides the boys with hot coffee, the pies, chocolate, magazines, writing materials, and the spiritual comfort which the boys in Khaki need. Until the last homeward-bound soldier is re-established in civilian life, will you not help the Salvation Army to combat the discomforts and evils that beset his path?

The service of the Salvation Army, founded on sacrifice, demonstrates the true spirit of the Master. It is directed to the extension of the Kingdom of Christ. For two generations the Salvation Army has stood out and out for God.

It approaches practical problems in a practical way and achieves RESULTS. It co-operates with all—overlaps none. It recognizes neither color, race nor creed. It is always in action, day and night. No organization does greater work at less cost. To carry on its great work it must have financial help, and on its behalf members of the Dominion Government, business men and returned soldiers endorse this appeal for funds.

"LET YOUR GRATITUDE FIND EXPRESSION IN SERVICE"

THE SALVATION ARMY MILLION DOLLAR FUND COMMITTEE

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GRIMM CHAMPION OUTFIT

The Gospel of the Frying Pan

By F. A. MACKENZIE

THE "Gospel of the Frying Pan" is the term applied by F. A. McKenzie, the noted war correspondent, who is on a lecturing tour in Canada to one feature of the Salvation Army's work in France. Mr. McKenzie has high praise for the Army, and in an interview says: "I have had opportunity, both in France and in England, but more especially in France, of seeing something of the admirable work done by the Salvation Army for our troops. In this work of helping the fighting men, tending the sick and wounded, and comforting the sorrowing and desolate, the Salvation Army has borne an honorable, distinguished and, in many ways, a unique part. Both the Canadian and the British branches of the Salvation Army have not been able to do all they would like because, owing to some official difficulties, they have not been able to send their workers up to the front lines. The Americans have been more fortunate. When I was with the American Army in Lorraine in the spring, the praise of the Salvation Army girl there was on all lips—her dough-nuts and her pies had won the good-will of the fighting men. I do not know if she preached to the boys; I never heard of her doing so. But she sewed on their buttons, mended their uniforms, and gave them a welcome when they got back in the support lines from the fighting trenches.

"The same work has been done on a considerable scale by the British and Canadian Salvation Army organizations working together along the Bases in France from Dunkirk to Le Havre. The Salvation Army started here by feeding the soldier. One of their first groups of workers that went out to France stayed in Boulogne and in a side street started to preach the 'Gospel of the Frying Pan.' They bought fish from the fishermen in the harbor; they cooked sausages and eggs, and very soon their fame went out to the camps. They started in a back, out of-the-way street and people said no soldier would hear of them, or would come to them, but before many weeks there were long lines of boys waiting for their turn, that they might get a meal that reminded them of home, and that they might see a woman's smile and hear a woman's greeting.

"The Salvation Army has preached the 'Gospel of the Frying Pan' very effectively since then. At Etaples, at the hut maintained, I believe, by the Canadian Salvation Army, one splendid Englishwoman, the daughter of a converted poacher, cooks night after night for hundreds of men, Imperials, Canadians, Australians and the like. To see her preside over her great boilers of fat, cooking the herrings and drying the eggs, 'just to the turn,' cheered one up. How the boys appreciate it can best be seen by the way they flock to her. Here in Etaples, the town that will always be sacred to the Canadian people because it was close to it that our Canadian nursing sisters were murdered by the German airmen last Whitsunday, at the Canadian hut the work still goes on; if it starts with the frying pan and the good food, it does not end there. 'Do you think I would leave my children at home and come out here simply to fry eggs and cook herrings and nothing else?' said your Mrs. Adjutant Hush to me one evening after I had been watching her at work. The end of the Salvation Army work in France is definitely, openly and unashamedly religious. It aims at helping to make better men, at strengthening the good in men, at reminding them of the old faith they learnt at home at their mother's knee, at helping them to get straight, and to keep straight.

"Don't misunderstand me—they are not trying to make them Salvationists. Out in France religious differences do not count for nearly as much as they do here; one finds the Roman Catholic padre, and the Methodist minister, and the Salvation Army captain, working together. Faced as we are with the most tremendous realities men ever had to face—by the realities of sudden death, of torturing wounds, of unspeakable devastation—all the minor differences are torn away."

FROM CITY TO FARM

By Nelson McDowell

WHEN the farmers are reported to be prosperous, the men of small capital in the city are tempted to try farming. They know, to their sorrow, the high prices of butter, eggs and meat and long for the rural districts where they believe these foods can be obtained without cost. They have seen farms worth ten to fifteen thousand dollars with fine houses, tractors and cars. It all looks easy. They do not know that the owners of these fine farms had a good start; in most cases the farms were given to them with little or nothing to pay. Another popular delusion is the idea that there is nothing to learn about farming and no experience to be acquired.

We will suppose Mr. Smith to be a man tired of life in the city. He at last decides to buy a farm in order to get big profits and easier work. A thousand dollars is rather small capital to begin farming with but Mr. Smith does not want to rent; he insists on *owning* a farm. A real estate agent sells him a farm with buildings and fences out of repair, 100 acres at a bargain for $2,000, first payment to be $800. The purchase is made in the fall, but Mr. Smith does not think of fall ploughing. Spring comes at last and Mr. Smith and family move to their country home. Mr. Smith has never had a business of his own before, but now he feels that he is a real part of the nation. It is true that he is in debt for his team and implements, but he expects to own a cow and a few hens soon and he remembers the price of butter and eggs in the city.

Having never ploughed before, Mr. Smith ploughs his first field about a foot deep, which is very bad for his sandy land and for his light team. He plants potatoes in this field in April, leaving the grain seeding till later. The weeds get the start of the potatoes and the bugs finally destroy them almost entirely. His small grain crop having been sown late in May on spring ploughing, turns out to be a failure on account of the dry weather. The payments cannot be met so Mr. Smith loses everything, including his high respect for farming. He returns to the city and stays there.

Wisdom consists in collecting all the available facts in the case before giving judgment. Mr. Smith made his mistakes because he thought there was nothing to learn about farming and didn't take the trouble to investigate. He jumped to conclusions like the men in the story of "The Blind Men and the Elephant" (Ontario Second Reader).

Mr. Jones, another man from the city, believes that he would like to live in the country. He wishes to gain experience and information about cheap and expensive farms, owning farms and renting, livestock and crops. Accordingly he works on a farm for a year as a hired man. At the end of a year he finds that he still likes farming. On account of his small capital he finally rents a good farm instead of trying to buy a poor one. Right from the start Mr. Jones was fairly successful. He begins in a small way with sheep, cattle and hogs and raised all the field crops that had been found profitable for his neighborhood. He doesn't believe in "putting all his eggs in one basket," as that invites failure.

By reading the bulletins from the experimental farms and a few good farm magazines, he manages to keep up with the times. Willingness to learn and steady work are helping him along towards the day when he will own a good farm and no longer be in danger of being told: "Services no longer required."

A Paying Investment All Year Round

The "Favorite" ensures highest possible returns every churning—because it is scientifically made to accomplish this result. *Proof* lies in the fact that it is used by the greatest butter producers all over the world. The *Reason* is the mechanism is so perfect, so smooth, and because it's made of selected oak, which does not chill like glass or crockery.

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BRIGHT, intelligent farmer in each township, must be well acquainted and have horse and cutter. Can earn good money without risking anything but time.

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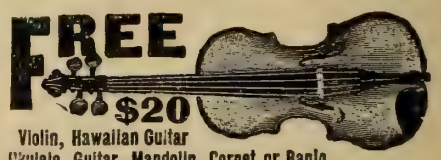

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BERRIES THAT PLEASE AND PAY

Continued from page 12

green blacks, which returned a net gain of over $1,300 on two acres, had charged against them a total expense of nearly $1,250, divided between winter pruning, which cost $36, summer pruning, which cost $37.20, ploughing, which cost $8, cultivation, four times, which cost $24, and the following other costs:

Picking ten times—	
820 crates at 46c	$411.00
Picking supervision—	
820 crates at 5c	40.00
Packing and nailing—	
820 crates at 2c	16.40
Cost of crates—	
820 crates at 33c	270.60
Cartage to railroad—	
820 crates at 2c	16.40
Loss in shipping—	
50c each on ten crates .	5.00
Brokerage—	
637 crates at 25c	159.25
Rent	225.00

Some of the foregoing costs were abnormal, owing to war conditions. Labor and materials were both at high levels. Winter labor was figured at 25 cents an hour, plowing and cultivating cost per hour 35 cents for man, and 15 cents for horse. The picking wages, entirely on a piece basis, were also high. It is apparent, however, that under any conditions the berry farmer's expenses must be a high minimum, though this doesn't particularly matter so long as market levels are in proportion.

It will be noted that brokerage charges of 25 cents are only charged to 637 crates, though 820 were marketed. There is interesting information connected with this. *The bulk of the crop was marketed through the Okanagan United Growers at an f.o.b. Chilliwack price of $3.25 a crate. Before the Munsons marketed this way, they had sold some of the blacks to local buyers, who paid a full dollar less, or $2.25. This speaks a good word for co-operative marketing.* This single piece of marketing judgment earned a large share of the high blackberry profits.

The loganberry picking season stretched from July 2 to August 16. Raspberries were a shorter season, July 8 to August 9. The blackberry picking began August 7 to October 1. Raspberries and loganberries were picked every two days, blackberries every three days. In picking loganberries, pickers kept deep red and bright red berries, the first full-ripe, the second under-ripe, in separate containers. Ripe berries were sold in local and Vancouver markets, berries on green Side were shipped to prairie markets. Mr. Munson speaks well of profit possibilities in loganberries.

SHOULD FARMERS BE DAIRY MANUFACTURERS?

Continued from page 11

"cream-buying-station." We are informed that sometimes two or three of these will be found in one small town. It costs money to operate one of these "stations," and the farmers have to "foot the bill." Then too, the persons operating "stations" frequently know little or nothing about cream, but run the business as a "side-line"—all of which tends to produce unsatisfactory raw material for the making of butter. It is also claimed that these "stations" are sometimes started for the purpose of "killing" a local creamery and as soon as a good "corpse" is produced, the big concern drops prices to the producer, much below those paid while the local creamery was alive and below actual values.

In the foregoing we have outlined some of the things which dairy farmers need to keep an eye on, from the manufacturing viewpoint. It pays to glance occasionally over the line-fence and see what our neighbors are doing. It is surprising the number of men who are able to make a "fat-living" by doing the thinking for the "other-fellow." The farmer is too often inclined to let some one else do the head-work, while he contents himself with hand-work entirely. Heads come first in any business-farming as well as elsewhere. Farmers need to do more with their heads if they would obtain a fair share of the rewards of their labor.

Since the foregoing was written, I have read the preliminary report of the U.F.O. Committee, re farmers owning creameries and cheeseries, the same as has been done in Saskatchewan, and may say, that I am in sympathy with this movement. However, it is well to bear in mind some of the difficulties as outlined in the foregoing article. May I add, that I am somewhat surprised to note that the Committee would expect much support from the Dairymen's Associations of Ontario for a movement of this kind. These associations are owned Body and Soul, by interests which have not been very careful in the past to promote the welfare of dairy farmers, except for selfish purposes.—

FARM PRODUCE PRICES

Continued from page 10

Something like a month ago a determined attempt was made by milk producers supplying the Toronto market to force sweet prices up to about 79c per pound of butterfat, net to the shipper. The dealers flatly refused to pay this amount, and the old prices, from 60 to 66c per pound, still continue.

Not only that, but the dealers won out again in the price of milk for retail distribution, forcing the price down from $3 per 8-gallon can to $2.80. When the price was raised from $2.50 to $3 in December the dealers cut the number of pint tickets for a dollar from 15 to 14, but since the recent reduction of 20c per can there has been no increase in the number of tickets sold. The dealers come out of the shuffle with 1c per can more spread than they had under the old $2.50 rate. It is to be hoped that they appreciate the action of the producers, as 1c per can of clear "velvet" is not to be sneezed at on the bulk that Toronto uses up every day.

In this connection it is also interesting to note that during the past five years the large dairies have driven fully 50 per cent. of the smaller ones out of business. Under the exacting restrictions of the Health Dept. of Toronto it is difficult for the small dairy to meet the competition of the large ones—which, themselves, it is claimed, have no easy sledding.

Cheese prices continue to climb, as was only to be expected, under the prevailing condition of a reduced make, heavy exports, and good consumptive demand all over Canada. At Toronto prices are being steadily advanced, and now the retailers are buying their cheese at 28½ and 29c per pound, with colored in particularly good demand. At Montreal transactions are going across at 25½ to 27½c; but at New York the top quality cheese is bringing from 37 to 37½c per pound.

Mild weather has started the hens laying in quantities earlier than usual, and all markets report heavier receipts, with the quality holding up fairly well, though all through the winter a considerable percentage of "held fresh" are always included in the run. The Toronto market recently declined 5c per dozen in the top price, leaving first quality fresh eggs at 65c per dozen, or 5c still above the same week of last year. On this basis extra small fresh eggs are worth only 60c per dozen, and held fresh 52c.

At Montreal the decline was 3c, which put fresh on a range of from 55 to 75c per dozen, according to grade, and with storage selling from 50 to 54c per dozen.

Virginia East,
Annapolis Co., N.B.

I have taken your FARMERS' MAGAZINE *for two years. I think it was sent on probation. Now I have been taking such papers for the past 30 years, and if I am any judge this is the best magazine and the most reliable that I have had to date.*

You will please find enclosed for two more years.

D. W. Pyne.

FARMERS FRIEND FENCING — FROM FACTORY to FARM

Announcement

The advent of peace, welcomed with joy in every home in the Dominion, brings to every one of us Canadians a new meaning, new opportunity, new responsibility, as regards our citizenship in this great and growing Nation.

To carry on during these reconstruction days, to build and rebuild for permanency, in everything that makes for peace, plenty and perpetual prosperity, is the ambition of every one of us. Every farm home in Canada must be made pleasant and comfortable. Every field, garden and lawn must be substantially, conveniently and pleasingly fenced. Our greeting to you at this time is to remind you of our part in Canadian development in the past and ask your co-operation and continued patronage for the future. May we, therefore, direct your attention to some of the fence facts that should be known and rightly understood by every patriotic citizen desirous of making Canada a better place to live in these days of well-earned and well-deserved peace.

FIRST, the time to buy and build fencing is now. Our improved and enlarged facilities, giving us the largest Fence Factory in Canada, enable us to render for Canadian farmers a superior, prompt, honest and efficient service—we are the "farmer's friend," first, last and all the time. Why? Because the farmer is our customer. We manufacture just such fencing as best meets the needs of the farmer.

SECOND, the purchasing power of every farmer is the highest ever. The farmer's medium of exchange—the crops he produces—is comparatively large. A bushel of wheat or a ton of hay will buy more fencing now than ever before. Prices will not—cannot—be lower for a long time to come. We mean prices of farm products. What the farmer produces and has to sell, that which represents his buying power, the world needs badly and must pay the price to get it. Nor will the price of materials used in manufacturing fencing be lower for a long time to come. Wire prices across the border are dependably fixed. That fixes the price for Canada. What real difference does it make as long as the parity is maintained? When the price of farm products is lowered, then and not until then will wire prices be lessened. It is to your advantage, therefore, to buy and build now.

THIRD, the Sarnia Fence Company has saved the farmers of Canada thousands upon thousands of dollars in actual money saved. Our plan of saving money for you is made possible under our selling system of direct dealing from factory to farm. Just two profits in the transaction—yours and ours. We are partners in the fence business. You buy and buy again, and others do the same. Satisfied customers mean a growing business. We pay nothing for your patronage, besides a good service rendered. You save by dealing directly with us on our direct dealing plan. It is a mutual co-operation between manufacturer and user of fencing that produces real fence satisfaction.

FOURTH, our price is always low—very low. If you could save twenty percent by buying from us, would you do it? We always quote lowest prices for just the kind of fencing you may need. Write us before you buy. Tell us your plan. Our expert advice may help you to a wise selection and, perhaps, mean a great saving of money. It is safest to know the truth about fencing before you act. Remember, we are fence manufacturers. Our one moderate profit added to actual cost of production leaves a larger profit for you.

FIFTH, our business is built upon the service basis—a real service to our customers—the satisfaction kind, the kind that lasts and brings repeat orders and induces your neighbors to do likewise. We owe the farmers of Canada the best fence service we are capable of giving. The farmers of Canada owe us their patronage as a consequence.

SIXTH, the Sarnia Fence Company saves money to every farmer who patronizes us. Our improved facilities, enlarged working capital, together with the fact that we have recently added to our management and working force the best fence talent obtainable, puts us way in advance in fence production. Our guarantee is back of every promise we make. Everything is just as represented in our advertising literature. Thousands of farmers testify as to the good quality of our fencing. The money you save and the satisfaction you get in dealing direct with us will be your compensation.

SEVENTH, we prepay freight on all fence orders over 200 lbs. Our prices are quoted on fencing delivered at your nearest station. You pay but once. That covers the price of the fence and the transportation to your home town, excepting electric lines and on steamboats.

This announcement will be followed by others in the Farm Papers of Canada from time to time. Do not wait, however. Cut out this announcement and get our name and address correctly fixed in your mind. We want you to know the truth about Sarnia fencing. No trouble to answer questions. Write us about your fencing plans. We are specialists in the fencing line and are here to help our farmer friends. Our advertising literature describes in detail the Sarnia fence and the best method of fence construction. It will make plain to you the Sarnia plan. We are yours to serve.

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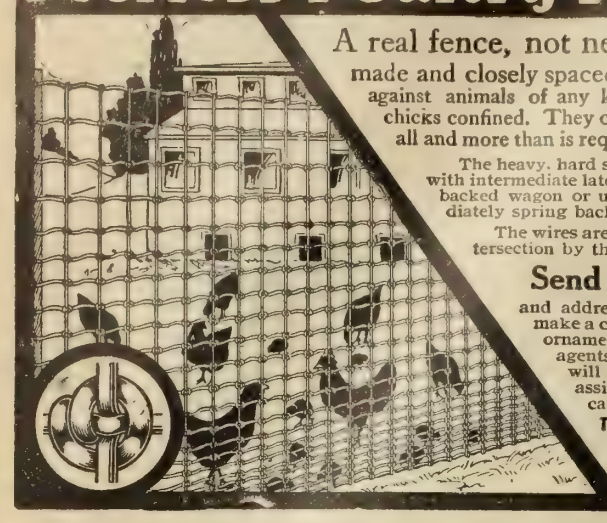

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The wires are held together at each intersection by the Peerless Lock.

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FOR RATES SEE TOP OF COLUMN
PAGE TWO

POULTRY

Orpingtons---All Solid Colors

By A. P. MARSHALL

THIS is one of the largest popular breeds and is of English origin. For anyone wanting a large breed of good general purpose qualities the Orpington can be depended upon to give first class results. For a time there was some tendency to grow them rather loose feathered and too short in body, but wise breeders have prevailed in the fashion of having good length and sensible feathers, very much to the advantage of the good qualities of the breed. The characteristic which most quickly determines the Orpington is the white legs and feet. So many of the breeds that could be in the least mistaken for them have yellow legs, that it is pretty safe to assume that the birds with the pale, white legs and white skin are Orpingtons. Of course the blacks have dusky feet.

Orpingtons are grand big fellows and are very commanding in appearance. They weigh: cocks 10 lbs.; cockerels 8½ lbs.; hens 8 lbs. and pullets 7 lbs. There are four recognized varieties: the Buff, the Black, the White and the Blue. All are solid colors, with the exception perhaps of the blues, which although good specimens have a color of fairly even appearance. Close observation will disclose the fact that the feathers are finely laced with darker color.

The Orpington is a stately bird and should be well set up on good stout legs. It has a fairly deep round body with a good full breast and a flat broad back. A good supply of saddle and hackle plumage has the effect of shortening the appearance of the male. The legs should be fairly short and well spread—the bird should have a solid, stocky appearance.

The Buff Orpington should be a rich, even buff throughout, being free from variety of color and rustiness or mealiness in the plumage. Nothing is more attractive than this big bird when the plumage is a nice, strong, even golden buff.

The Blacks should be a rich greenish-black throughout, and make an attractive bird of considerable merit.

The Whites should be pure white throughout and make an especially profitable breed. Brassiness and foreign color are now less common and good stay-white birds are found in large numbers. Whites of the right type supply a variety that makes a most attractive bird, as well as providing profitable service. They make very fine Capons.

Like all Blues, Blue Orpingtons are the least popular because of the difficulty of producing good blue color. They are very attractive when they come right, but strange as it may seem good blues bred together do not produce the desired result, and many become seriously disappointed with their experience.

The Orpington is too good a breed to lose out and will remain popular to many for some time to come. In their present good type the breed is bound to continue profitable to a great many people.

LIGHT IN THE POULTRY HOUSE

(Experimental Farms Note)

FOR some time it has been a question whether artificial light in the poultry house was a benefit or not, and to help solve the problem, the Poultry Division of the Experimental Farms have, tested it for two seasons, during the winter of 1916-17 with two pens (40 birds in all) of Barred Rock pullets and during last winter with two pens of Rock pullets and two pens of Leghorn pullets (40 birds of each breed).

In each light pen of twenty birds, two tungsten 40 watt lamps were used. They were turned on at 6 a.m. and left till daylight, then turned on again in the afternoon before dusk and left till 9 p.m. This was started in November when the days became short and continued until the middle of March when light was unnecessary.

In the 1916-17 test the light pen laid 1,106 eggs, with a total value of $54.93. The cost of feed was $22.53, the cost of light $2.40, a total cost of $24.73. This gave a balance over cost of feed and light of $30.20 or a cost per dozen eggs of 26.8 cents.

The dark pen laid 636 eggs with a total value of $29.46; cost of feed was $21.09. This gave a balance over cost of feed of $8.37. The cost per dozen eggs was 39.8 cents.

In 1917-18, the yields were not high in either case, and the total difference in egg yield in the six months was by no means large, but the forty birds with light gave a better revenue than the forty without light. This difference was made up in the time that the eggs were received. Those with the light gave their heaviest yields in December and January, while by far the heaviest months for the Leghorns without light were March and April and for the Rocks January and February.

The total figures from the two pens with the light were: Number of eggs, 2,470; value, $136.32; cost of feed $55.48; cost of light, $3.20; balance $77.64 or a cost of 28.5 cents per dozen.

Those without light laid 2,242 eggs; value $118.90; cost of feed $60.01; balance $58.94; a cost of one dozen eggs 32.1 cents.

For both years, the light pens laid 3,476 eggs, at a market value of $191.25. The feed and light cost $83.41, leaving a balance of $107.84, or a cost per dozen of 28.7 cents

The dark pens laid 2,878 eggs worth $148.36. The cost of feed was $81.10 and the cost of one dozen was 33.8 cents.

The conclusion may be drawn that for early winter eggs during the short days, the light does increase the egg yield, but later in the season the yield is not as heavy as with birds that have not had the light. The advisability of using light, therefore, will depend upon what is wanted. If early winter and high priced eating eggs are the object the lights are an advantage; if eggs during the hatching season are desired, the lights are a disadvantage.

REMEDIES FOR POULTRY

By H. W. McKenzie

COD-LIVER OIL is good for fowls light in condition and also for those lagging in the moult.

Castor-oil is useful in cases of diarrhoea. A dose will relieve the intestines of irritant matter, the cause of the trouble, and cool and clean the fowls.

Olive-oil is also good in many cases of looseness of the bowels and should follow the use of castor-oil. It is also useful in cases of egg binding, and enlarged crops and for dressing the combs of fowls to prevent frost-bite. Oil of Eucalyptus is useful in cases of catarrh cold.

Camphorated-oil is good in cases of cramp, caused through running on damp ground. With half an ounce of camphorated-oil should be mixed a teaspoonful of turpentine; thus a good ointment for rubbing into cramped legs will be on hand.

Coal-oil is a good remedy for scaly legs if applied daily to the affected parts. When the scaly matter is removed the legs should be washed and dried and rubbed with vaseline.

DAIRYING

Individuality *of* Cows

By W. H. UNDERWOOD

ALL cows are not by any means the same. There is the difference between gain and loss and then there is the inconceivable yield with its proportionate profit. There is the cow that produces 12,000 pounds of milk a year with her handsome profit, the 2,000 pound cow with her loss and there is the 8,000 pound cow with her fair gain to her owner. Where is the difference? The poor or profitless cow is a cow to be sure but let us be thankful that this kind is growing fewer and fewer. On the other hand take the cow with the ability to give 10,000 to 12,000 pounds of milk in a year and we have a cow that is a paying proposition and of a standard that is within reach of every progressive dairyman.

Assume that we have a cow of the required "milk power." We must now learn the peculiarities of this machine as we would the peculiarities of any other one equally intricate and comply with them if we are to secure the best results. If one kind of feed does not appeal to her appetite we should try some other kind. We might have to feed her salt every day (as we should) or we might have to give her water before her grain or perhaps she would relish her grain sprinkled over her silage. It always pays to encourage a cow, to "baby" her, for it is she that is making the milk and she has complete control over it.

There is not the slightest shadow of a doubt but that the propensity to give large quantities of milk is transmissible. There is no doubt at all but that the power to make and give milk can be increased and strengthened if the propensity be present. In athletics a good runner improves with training. In racing a horse must needs be trained to improve the gait and to increase the speed. A race horse is also fed and cared for that it may be speedy. So a cow can by proper feeding, training and care be made to do that for which she was born. And the dam that has this or any other characteristic developed in her will certainly transmit it to her offspring.

Individuality in a cow is evidenced by superior development in all her parts and the reappearance of these traits in her offspring. The prepotent sire imprints his individuality on his offspring with unmistakable exactness. Moreover the individuality of the owner is shown in the cows of his herd. If we see a herd that is well cared for and all of whose members bear resemblance to each other we conclude at once that the owner has an ideal cow in mind and that he is trying to build up his herd to a certain type,

Often we find a herd in which there is an old cow of superior merit and along with her we find perhaps three or four or even more all having the same characteristic. The old one is the dam, granddam, great granddam, etc., of these and her characteristics have been handed down to her offspring. Every man who has an animal of noteworthy qualities should by all means keep her and attempt to get more like her from her. A herd that as a whole shows a herd individuality is one to be proud of if it is of a high grade.

MORE MONEY IN MILK SHIPPING

MEETING of an institute educational character have nearly always been promoted among dairymen by government departments. An innovation introduced in the Fraser Valley of British Columbia this winter is important. The Fraser Valley Milk Producers' Association, a co-operation farmers' concern which dominates the Vancouver market, is holding a series of meetings at which practical men explain vital, live problems of the dairy business. J. W. Berry, successful Langley dairyman, is one leading speaker. Two government testers, W. K. MacLeod and J. B. Watson, and Leon Chevalley, who has had extensive dairy manufacturing experience, complete a quartette which is accomplishing much good work. Not only do these men thoroughly understand fundamentals in their special lines, but they have that intimate knowledge of local things that makes anything they say of genuine, real value.

J. W. Barry, who besides operating one of the biggest farm dairying businesses in Western Canada finds time to participate prominently as a director of the Milk Producers' Association, is a big, forceful man, with a hearty voice and a convincing, direct way of saying things. His special topic at these winter meetings has been the butterfat test. He is anxious to have those farmers producing milk exclusively for the city retail trade make a product of the butterfat grade most profitable. The four markets of Fraser Valley milk farmers are the city trade, the condensories, the cheese factory, and butter, profitable Mr. Berry declares in the order named. From the standpoint of the Milk Association, principally interested in market milk, some districts of the Fraser Valley produce milk too high in butterfat. Chilliwack is one such.

Berry told Chilliwack farmers a larger quantity of milk, testing 3.5 per cent., was more profitable for them than the higher test, common to the district. Market milk is bought on a butterfat basis and sold on a quantity basis, consequently milk testing 4 or 5 per cent. is reduced to 3.5 per cent. and the cream taken from the milk is sold at the cream price, which is considerably lower than the butterfat returns. He advised farmers making market milk to consider a cow's production, not her test, as the index of her profit-making value.

No dairyman goes to sleep when such a subject is under discussion. The pocketbook appeal, in farming or any other occupation or business, is a powerful one.

Other speakers also go into the subject of tests, from individual standpoints. How tests are made, what causes variations, care of cans and other utensils, are discussed, all with a view to better understanding, and, finally, to better profits.

HOLSTEIN DIRECTORS

THE election by ballot of the Directors of the Holstein-Friesian Association of Canada for the year 1919 for the provinces other than Ontario has been completed. The following are the directors elected:—

Quebec—Mr. Neil Sangster, Ormstown, Que.; Mr. P. J. Salley, Lachine Rapids, Que. Maritime Provinces—Mr. Walter M. Lea, Victoria, P.E.I. Manitoba—Mr. W. J. Cummings, Winnipeg, Man. Saskatchewan—Mr. Harry Follett, Duval, Sask. Alberta—Mr. Joseph H. Laycock, Okotoks, Alta. British Columbia—Dr. S. F. Tolmie, M.P., Victoria, B.C.

ARE YOU FEEDING WORMS?

Feeding wormy animals is wasting food. They eat more but they do not thrive.

Every farmer wants to be up to the limit of production now while the hungry world is calling for food. Make every pound of feed you feed do its whole duty.

Drive out the worms and condition your stock for growth, for milk, for work—for beef, mutton and pork, by feeding Dr. Hess Stock Tonic.

DR. HESS STOCK TONIC

Eliminate Waste and Increase Production

Over three million farmers in the United States and Canada are feeding Dr. Hess Stock Tonic regularly

BECAUSE

it means healthy, thrifty animals free from worms. It contains *Tonics to improve the appetite, Laxatives for the bowels, Vermifuges to expel worms, Aids for digestion, Ingredients which have a favorable action on the liver and kidneys.*

The dealer in your town will sell you Dr. Hess Stock Tonic according to your needs and refund your money if it does not do what is claimed. Buy 2 lbs. for each average hog, 5 lbs. for each horse, cow or steer, to start with. Feed as directed and see how your animals thrive.

Why pay the peddler twice my price?

Dr. Hess Poultry PAN-A-CE-A will help make your hens lay now

25-lb. Pail, $3.00 100-lb. Drum, $10.00

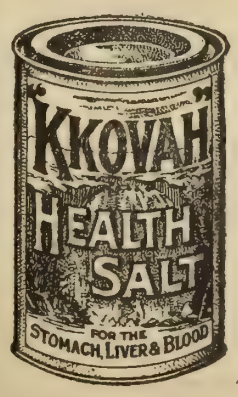
Smaller packages in proportion

Dr. HESS & CLARK, Ashland, Ohio

Dr. Hess Instant Louse Killer Kills Lice

Why run the risk of breakdown?

These are worrying times, and worry reacts on health. Nothing organically wrong, probably, but just that lack of energy which makes work distasteful. There's no need to call in the doctor—start the Kkovah habit; a teaspoonful on rising in the morning.



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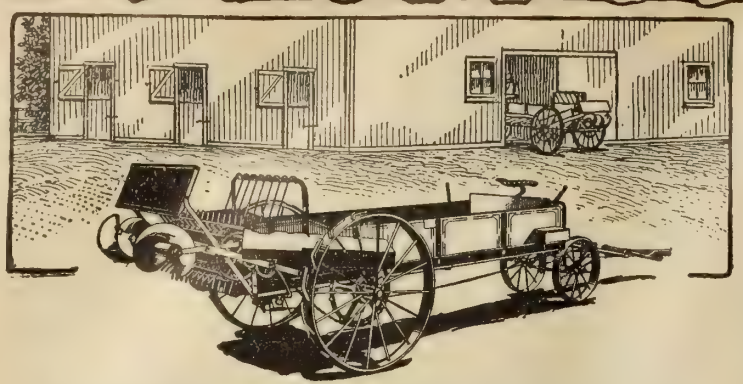
Makes you fit---Keeps you fit

It tones up the organs and helps them to remove the waste and poisonous matter from the system which is the cause of the trouble. It's the safest of all aperients for the children.

Obtained from Grocers, Drug Stores, etc.

Sutcliffe & Bingham, Ltd., Manchester, England

N.B. Send a tin to your boy at the front or at sea. It will keep him fit.



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This evenness of spreading is due to **McCormick** design. The reversing apron is driven by a worm feed which maintains the same relative speed of apron to beater at all times. The manure is thus fed steadily to the beater, which tears it into small pieces and delivers it to a spiral beater. The spiral gives the manure a second beating, makes the pieces still smaller and spreads evenly beyond the wheel tracks. Each particle of the soil is thus properly fertilized, and the whole field put in condition to produce a bumper crop. No manure is wasted. A **McCormick** spreader makes twenty loads do the work of forty spread with a fork.

McCormick spreaders are made in three sizes. No. 8 is a 49-bushel machine; No. 5, 55 bushels; and No. 6, 63 bushels. All are of the popular low type, with narrow boxes, cut-under front wheels, and strong steel frames.

See the **McCormick** local dealer, or write the nearest branch house for catalogue and full information.

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EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

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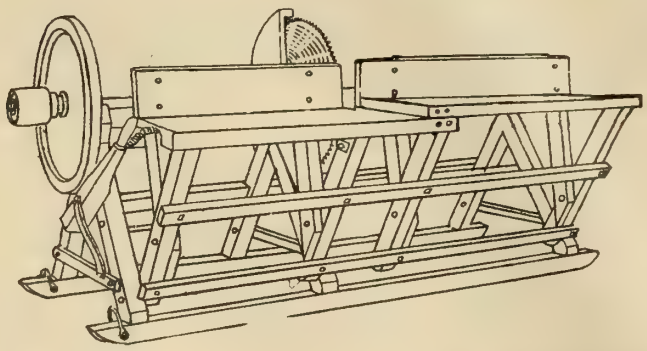
The Moody Long-Swing Table Saw With Steel Table



You can absolutely rely on the strength and solidity of the well seasoned **hardwood frame**, strongly bolted and firmly braced. The shaft is of lathe turned **steel**. **The boxes** are babbitted and the log tables are plated with heavy steel. See new **style non-binding** table. All our circular saw machines have a SAFETY STRAP **around the shaft close** up to the saw. For full particulars and catalogue write

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FARM ENGINEERING

A Tractor Manufacturer Talks

By JOHN MUIR

OUR company have been manufacturing tractors for nine years. We started with 28 h.p. machine, belt power; weight 12,000 pounds; this engine would pull three to four 14 in. plows.

"At trial held under the Winnipeg Industrial Exhibition, the American manufacturer had larger and heavier engines of sufficient power and weight to pull six and seven 14 in. plows. The Western farmer paid but little attention to what was then termed by them our little tractor, and followed the larger machine. This condition inspired our Western branch houses with the idea that there should be engines of larger capacity, and they prevailed upon us to produce a larger engine. At the next trial, a year following, at the same exhibition, our company exhibited a 35 h.p. engine, belt power, weight 14,000 pounds, which had the power to pull five 14 in. plows, but the American manufacturers had again produced larger than their former engines and exhibited engines that would pull ten and twelve plows, and we were then prevailed upon to build a still larger engine, and the third year at the Winnipeg Exhibition, we exhibited a 50 h.p. engine which weighed 17,000 pounds; some other makes of the same power weighed 23,000 pounds.

"This condition has, by actual experience in the traction engine business, namely the production of heavy engines of larger power, been a most unfortunate chapter in the development of the tractor business to the Western farmer, and many of these farmers were placed in a very awkward position financially through having to pay for these heavy engines which were unsuited to the work which they had to do with them, and while this is true, the loss was also very heavy to the manufacturers, who were compelled to take their engines back in many cases and they were largely scrap, and very often handed back the money or notes to the farmers who had purchased, rather than injure their reputation.

"The Hon. Mr. Motherwell, Minister of Agriculture for Saskatchewan, wrote letters in the agricultural papers in Western Canada condemning these heavy tractors, and warning farmers against using them, and this seems to have been the end of the heavier traction engines for agricultural purposes. Following this, there has been a race as to who could produce the smallest and lightest tractor. I have a report in an American paper, namely "Farm Machinery, Farm Power," published in St. Louis, Mo., before me, giving the names of six men killed, and four injured for life, by one of the lightest made tractors toppling over backwards on the operator and crushing their life out. This is an engine of an American make.

"In reference to present day and future tractor business, there is undoubtedly a good business to be done in this country and in my judgment it will continue to grow, if the proper tractor, namely a tractor of the right size and weight, is placed in the farmers' hands; what is needed is one that is adapted to do the work required of it, both in the field and by operating from the belt, and there are thousands which will be required.

"Conditions, however, for the use of a tractor, should be considered by the farmer before he purchases. On rough, stony farms, the farmer would be well advised to use horses, and not tractors, for the tilling of his soil.

"From my observation, my judgment is that two sizes of traction engines are required to meet the different conditions and work where conditions vary as to the requirements. The ordinary farmer should have power enough in the engine he purchases to fill his silo in a hurry; run a medium sized thresher; grind his grain, and take care of all power requirements on the farm, and also to pull three or four plows, according to the condition of his soil, and if desired to draw the other implements to till the soil and take off his harvest. There may be a limited place for a smaller tractor in some cases. I have given you, shortly, my views and the experience of our company in the tractor business to date, and I trust it may be of interest to all readers."

TRACTORS AND DAIRY FARMS

THE tractor has had a large part in solving the labor shortage dilemma and in making it possible for farmers to increase their production despite the war handicaps. It has demonstrated its value in many communities, not the least of these being where the average sized dairy farm prevails, says "Hoard's Dairyman." According to Professor Jones of the Wisconsin College of Agriculture, one farmer out of every forty-four operating a 100-acre farm in that state used a tractor last year and a large increase in numbers is predicted during the coming year.

As an indication of the demand and adaptability of the tractor, we know of no better illustration than was recently brought to our attention by reading a copy of the "Highland Press," a local paper published in a Wisconsin village of only 1,000 people. The first item to meet our eye was the report of cheese prices as paid on the local board, and the importance of the cheese industry is apparent from the fact that Iowa County, in which Highland is situated, has some 140 cheese factories. Immediately following this item was the report that a local implement dealer had just received a shipment of twelve 10-20 tractors, ten of which were already sold. The newspaper then went on to describe just where these tractors had gone and that the dealer had already an order in for another similar shipment.

The above item is significant from the fact that these tractors were sold in a small village at the end of a spur railroad, and in a peculiarly strong dairy district, and also from the fact that Iowa County is quite a hilly section. This is but further evidence of the adaptability of the tractor to dairy farm conditions, and that hilly land does not stop their introduction. The future of the tractor on the dairy farm is best told by illustrations of this character and by the further fact that in visiting dairy communities, one notes tractors placed here and there throughout the country and the interest of the neighbors in what is being accomplished by this somewhat noisy, smelly, iron horse.

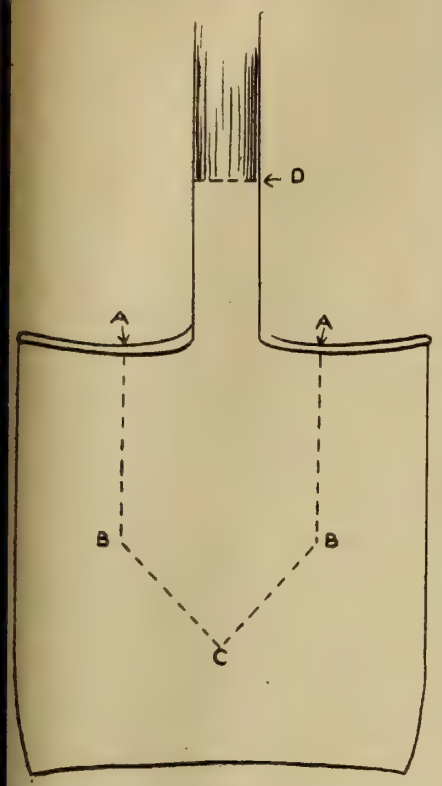
COURSES IN GASOLINE ENGINES

AMONG the new features undertaken by J. S. Knapp, Agricultural Representative for Waterloo County, this year were two courses in gasoline engines. These courses were each of three days' duration, and were conducted principally by Professor W. H. Day, of the Department of Physics, Ontario Agricultural College, assisted by the representative of a firm manufacturing gasoline engines. There was an attendance of from fifty to seventy-five every afternoon at both courses. Interest seemed to be particularly keen, as many are interested in tractors and power.

A GARDEN TROWEL

By John D. Crossley

TAKE an old worn-out socket shovel. The Fox shovel is a very good type. Cut down the blade from A to B, 4 inches, with a hack saw. A is 2 inches



from the handle. Then cut from B to C, C being 6 inches from the shovel handle. Cut the handle off at D below the lower rivet hole; drill a fresh hole through, and put in a short wooden handle about 4 inches long.

HOUSING FARM MACHINERY

DOES it pay to go to the expense of building a machine shed, or provide canvas to cover the machinery at night that it may be protected from rain or dew? Mr. Heddles, chairman Wisconsin Council of Defense, in riding from Lancaster to Madison, a distance of 70 miles, busied himself in noting the amount of machinery he could observe from the car window on one side of the track, says Hoard's Dairyman. He listed the machinery and then went to a dealer and found that he had seen $6,000 worth of machinery on one side of the track in that short distance.

In discussing this subject with men who have been engaged in farming for over 40 years, it was brought out that a harvester put under a shed when not in use and covered with a canvas at night during harvest would last at least 20 years, providing the operator took good care of it in other respects. It was held by these men that a harvester exposed to the elements would last but five years. One farmer in the crowd stated that the harvester he used this year for cutting his grain was 27 years old. It was either put into the machine shed at night or covered with a canvas. He further makes it a practice when the harvester is put away to see that all worn parts are replaced and it is made ready in every respect for use the next season.

The shiftless farmer can't afford to build a machine shed for the protection of machinery. He can't afford to put it into good repair when he is through using it. But the good farmer, the one who makes money, says he can't afford to leave his machinery exposed to the elements or neglect to give it proper repairing.

Appin, Ont.

Enclosed find two dollars in payment for subscription for FARMERS' MAGAZINE. *Could hardly get along without it, as it is very valuable for information it contains about farming and many other things.*

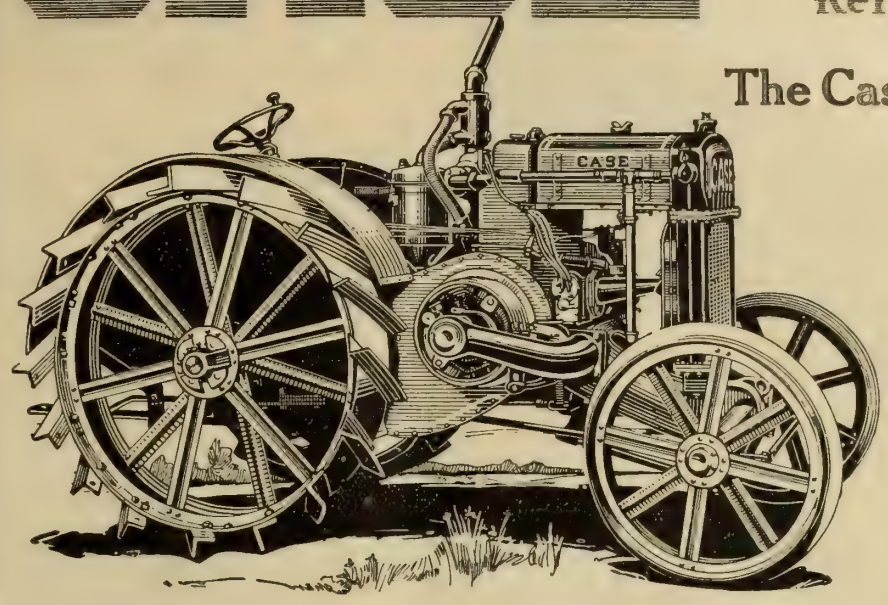
Kindly extend my subscription two years.

D. L. Eaton.

CASE ANNOUNCES

A New 3 or 4 Plow Kerosene Tractor

The Case 15-27



Pulls 3 Plows in Hard Plowing—
4 Plows Under Favorable Conditions

Here is the latest Case Tractor—offered in our 77th year of experience in the production of power-farming machinery and 27th in the production of motor tractors.

No tractor is finer. And we know of no equal.

We feel certain that this Case 15-27 will receive instant recognition among knowing farmers everywhere.

No man can afford to judge tractors of this size—nor decide which is best—until he has studied this Case 15-27.

While rated at 15 horsepower on the drawbar, this Case 15-27 can deliver more than 18 horsepower.

While rated at 27 horsepower on the belt, it can deliver about 33 horsepower.

In fields where plowing is difficult—tough or baked soil, stiff grades, etc.—this tractor pulls 3 plows easily. Where conditions are favorable this tractor can pull 4 plows.

With reasonably good footing this tractor easily delivers a pull of 3,000 pounds at the drawbar. Its reserve power makes it possible to attain 3,600 pounds pull, or over.

Under variable soil and field conditions, the operator may take advantage of the two-speed transmission, using low speed (2¼ miles per hour) for hard pulls, and high speed (3½ miles per hour) for normal draft.

Your field conditions will determine whether you should use 3 or 4 plows, or whether you should pull 3 plows on low or high gear.

A complete illustrated and descriptive catalog of all Case Kerosene Tractors will be sent gladly, upon request.

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Toronto, Ont.; Montreal, Que.; Ottawa, Ont.; St. John, N. B.

Case Superiorities

1 Weighs about 5,600 pounds. Low and compact with short wheelbase. Turning radius 13¾ ft. Stays on all fours.

2 Rated 15 horsepower on the drawbar and 27 horsepower on the belt, which is only 80 per cent of its actual capacity.

3 Four-cylinder Case valve-in-head motor. Removable head. Motor is set crosswise on frame, affording use of all spur gears. This conserves power.

4 One-piece cast main frame, forming dustproof housing for rear axle, bull pinion shaft, transmission and the bearings for these parts. Also a base for motor. This construction brings rigidity and prevents disalignment.

5 Belt pulley mounted on the engine crank shaft. No gears used to drive it. Pulley is part of the tractor, not an extra-cost accessory.

6 All traction gears are cut steel, enclosed and running in oil. No bevel gears, chain, worm or friction drive parts.

7 Case Sylphon Thermostat controls cooling system and insures complete combustion of kerosene in the motor. Prevents raw fuel from passing by pistons and diluting oil in the crank case.

8 Case air washer delivers clean air to carburetor. No grit nor dust gets into cylinders to minimize their efficiency and shorten their life.

9 All interior motor parts lubricated by a combination pump and splash system. Speed governor, fan drive and magneto are dustproof and well oiled.

10 Hyatt Roller Bearings throughout. High tension ignition. Kingston carburetor. Radiator with a cast frame. Core, copper fin and tube; non-clogging type.

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NEARLY 150 PARTS LESS THAN ANY OTHER SPREADER

LOW COST OF UP-KEEP. STRENGTH—DURABILITY—LONG-LIFE

Easy to Load--- Only Hip High.

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Gears are Water-Tight--- Cannot Freeze or Become Clogged.

No Clutches--- No Chains.

Can be Equipped With Widespread or Straw-Spreading Attachments, or Tractor Hitch.

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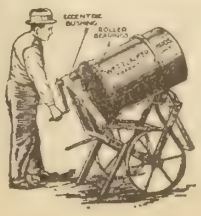

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Hand cement mixer pays for itself in 7 days. Write for Special Offers. Crushers, Brick, Block, Tile Machines, Power Mixers, etc. New and Second Hand Gas Engines.

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No More Galls if You Use This Open-Throat Cotton Collar!

On over a million farms this cotton collar is being used in preference to leather. Not because they are cheaper or save leather for other needs, but because the Lankford Humane Collar means freedom from galls. Gall-afflicted horses work in them every day, and shoulders heal while in harness.

Made of closely woven army duck, like a surgical bandage. Stuffed with soft, springy cotton fiber that absorbs sweat and impurities from sores. Keeps neck dry and cool.

Made with an open throat that gives pulling muscles full play—moves with the pulling muscles, instead of chafing against them. Cannot sweeney. Will not pack or harden—often lasts three or more seasons.

Dealers sell them on the guarantee that galled horses get well while working in Lankfords. If your dealer cannot supply you, send us $2.50, and we will ship you a collar, charges prepaid. (7-2c)

Trade Mark

Lankford HUMANE HORSE COLLAR

Price $2.50 Delivered. Note the open throat—can't rub the shoulders.

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For sale -Twelve bulls, 9 to 15 mos. old, some of them choice prospects for pure-bred herd headers, winners themselves, sired by champions and from good dams. Could also supply females not related. Write your wants. Visitors welcome.

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LIVESTOCK

Beef Breeds Lead?

By A. SHEPHERD

IN FARMERS' MAGAZINE of Dec. 1st I read a very interesting letter by Geo. E. Day on why the Shorthorns lead in Canada. He says beef with milk is the farmers' cow. Does that cow really exist? The late John Bright said that there was no such thing as a first-class milch cow and a first-class beef cow combined in one animal or breed of animals, and he was in a good position to know. Further Mr. Day claims that a carload of Shorthorn steers in June sold for $17.15 on Toronto market, highest ever paid in Canada, also in October, a carload sold on Chicago market for $19.60, another high record. After the above records of beef, and the fact that the Shorthorn cattle predominated in Canada to about 80 per cent. of all beef breeds until the last few years, is it any wonder that they lead in Canada, especially in point of numbers and that Mr. Day sings their praises? But let us take a glance, and see what some other beef breeds are doing, both on the market and on the block. If reports of those contests can be taken and we trust they can, in the Chicago International Grand Champion single steer awards from 1900 to 1916, we find that the Doddie has taken 10 firsts, Shorthorn one, Hereford two, crosses two. 1914 and 1915 fairs were not held.

In Grand Champion fat carloads, 1900 to 1916, we find that Doddie again takes 12 firsts, Hereford 2 firsts, Shorthorns 1 first. We also notice that in 1916 Aberdeen Angus fat carload sold for $28.00 per cwt.

In Grand Champion carcass awards, Chicago 1900 to 1916, we find the Doddie again takes 14 firsts, Shorthorn one first.

Also at Guelph Winter Fair for single steer from 1912 to 1918 they took 7 firsts and at Toronto National Fat Stock Show Grand Champion and all breeds, 1913 to 1917, first place went to the Blacks, even T. A. Russell's Shorty had to give way to Hillcrest Lad at Guelph.

What about Fyfie Knight, Grand Champion yearling at Chicago International Livestock Exposition, weight 1340 and sold at the record price of $2.50 per lb., or a total of $3,350.00, I do not know what the Blacks can do at the pail, but apparently they do as well as other beef breeds at raising their own calfs, and that is about all any of them can do and do it right. After reading the history of the Blacks, and also of the Shorthorns and Herefords, I often wonder which would be the best breed for a beginner who is going for beef only. This apparently is a hard question to decide, as I see scores of farmers go in on one breed for a few years, then drop them and try another.

One thing we should strive for and that is community breeding of one good beef breed, then when a buyer comes he can get a carload of the kinds he wants, instead of having to take Whites, Reds, and Blacks, and all their several crosses. It would be encouragement for the buyer and money in pocket for the farmer.

A B. C. BULL SALE

By JOHN PAWTUCKAWAY

THE British Columbia Livestock Show and Sales Association was formed recently at Kamloops. It is a stock-breeders' organization, one object of which will be the annual holding of a bull sale a fortnight before the well-known Calgary sale, which has been patronized to a growing extent by British Columbia farmers. The secretary is George C. Hay. The idea is that B.C. farmers needing sires can attend this provincial sale first, consider the offerings of provincial breeders, and then, failing to make the contemplate purchase, can still attend the Calgar sale. It is believed that many can g right at home, with considerable sa ing in expense, just what they nee All over the British Columbia Interio where cattle-raising is still on a rang basis, the great value of the purebre sire is receiving deserved recognitio

In the list of officers of this ne British Columbia organization ar found many British Columbia's for most livestock men. Included are B. Ward, of the Douglass Lake Catt Company; George Heggie, resider manager of the L. & A. ranch at Ve non, Okanagan Valley; T. W. Patte son and Alex. Davie, well-known Delt breeders; M. Hereron, Kelowna dair man; D. W. Strachan, Tranquille; Ma Hassen, Armstrong; H. F. Mytto Kamloops; W. Johnson, Alkali Lak J. Redmen, Knutsford; H. S. Clessb Merritt; A. Fehr, Savona; W. S. Ta Ducks; L. F. Stobart, Cange Ranch J. Hargraves, Soda Creek; H. D. Wrigh Chinook Cove; T. G. Gordon, Grand Prairie; W. Palmer, Salmon Arm Hon. E. D. Barrow, provincial ministe of agriculture, is honorary presiden and W. T. McDonald, livestock com missioner, is honorary vice-president.

A BOY AND HIS RUNT PIG

By DOUGLAS MORRIS

LAST spring my father got nine youn hogs six weeks old. Eight of thes were good, but the other only weighe five pounds at six weeks. We put ther in a pen together and the eight did we while the other one went back. On see ing this, my father told me I could hav it if I could raise it. So I took it ou and put it in a small, dry, clean pen b itself, and began feeding it all the mil it wanted. This I continued for thre weeks, when I commenced feeding i oat chop and less milk. As we then be gan selling the milk and getting whey it only got oat chop and whey to eat By this time it was warm enough to b out around. It became quiet and grew like a weed.

At four months it got five quarts o chopped oats and barley and whey t eat, all the water it wanted to drink a little salt in feed once in a while.

Each night after the heat of the da in summer it would go out with th cows and graze on the hillside. It neve rooted and never had a ring in its nose Each week after four months I in creased the feed one pint and made it a little stronger. At six months it weigh ed two hundred pounds while the othe eight averaged 220 a piece.

COMMON PARASITES OF SWINE

(Experimental Farms Note)

SWINE are subject to several para sites, external and internal. Of th first-class the most troublesome is th ordinary hog-louse. These insects ar responsible for such unthriftiness an poor gains; are an advertisement o the unobservant eye or carelessness o the feeder, and are intolerable in tha unless the infestation is of long stand ing, they are fairly easy of eradication Methods of Eradication:

1.—Pigs may be dipped or sprayed with any good creolin or coal-tar disinfectant, made up as per directions accompanying the preparation.

2.—Coal oil or kerosene is used by some. Though effective it has a blistering action and should be avoided.

3.—Fuel oil is highly recommended. Experiments with it at Ottawa proved it efficient, but slightly irritant and leav-

Great Shorthorn Sale

ALL TOP-NOTCHERS

AT WINTER FAIR BUILDING

Guelph, Ont., Friday, Feb. 7, 1919

60 head—15 cows with calves at foot, 5 cows due in February, 10 cows and heifers bred, 7 open heifers and 9 bulls.

Such tribes as Cruickshank Lovely, Roan Lady, Augusta, Brawith Buds, Marr Missie, Emma, Rosa Hope, Rosemary Princess, Miss Syme and others.

Such sires as Newton Loyalist (Imp.) a Cruickshank Lovely, sired by Newton Crystal, one of the best breeding bulls in Scotland, being the sire of Royal Crest, a great show bull, selling at the Perth sales for $18,000. Newton Loyalist has proven himself the kind that breeders want to pattern their herds after.

ROSA HOPE 21ST
The grand champion at Toronto two years in succession.

NEWTON LOYALIST (IMP.)
The great show bull that has proven his merit as a breeder.

Roan Lady is a great, massive cow with great spring of rib. Won the aged cow class throughout the Canadian circuit and is due to calve on Feb. 12th.

Rosa Hope 21st is a grand heifer.

Queen Emmeline is a great heifer and should make a grand breeding and show cow.

Emma 62nd if of the choicest breeding.

Augusta of Langbank is a thick, low set heifer, her grand dam, Augusta Queen 3rd, is the dam of Augusta Queen 14th, which sold in Miner's sale, Chicago, for $4,025.

Brawith Rose, 2nd, is a fine show calf, being a prize-winner from Calgary to Chicago.

Princess Emmeline, Orange Maid, and others, are in good shape for show and breeding purposes.

Utility Shorthorns that are reliable. The cows are a fine lot of regular breeders and good milkers. Many are winners at all the Canadian fairs and the Chicago International.

GUARANTEE A health certificate goes with each lot. Each animal tested and guaranteed to pass a retest in 60 days and not later than 65 days from date of original test, such retest to be conducted by Canadian Government Inspector or United States Federal Inspector, or authorized State Veterinary. Each lot is insured for 60 days from date of sale in the General Animals Insurance Co., of Montreal, against death from any cause. Policy covers full value at price bid off through sale and made out in name of purchaser.

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Carey M. Jones, S. Milne, Adam Wood, and Capt. Robson, Auctioneers

J. J. ELLIOTT, Guelph, Can.

Sale in Winter Fair Building, Guelph, reached by all railroads

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OIL CAKE MEAL and COTTON SEED MEAL

The Organization of Resources Committee, as a war measure, made arrangements to avoid a shortage of feeding stuffs in Ontario through the manufacturing of Standard Feeds, and for this purpose imported Oil Cake and Cotton Seed Meal. This action of the Committee seemed necessary as the trade was unwilling to incur the necessary risk, and because of embargoes and transportation difficulties *Ontario would have been short of concentrates.* The Committee assumed the risks and *has* concentrates *on hand* for you.

STANDARD FEEDS are manufactured and sold by the following:

The Campbell Flour Mills Company, Limited	West Toronto
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A. A. McFall	Bolton
Peterboro Cereal Company	Peterboro

Oil Cake and Cotton Seed Meal

As a result of changed conditions, these materials can now be sold as such. Sales will be made to any person or firm desiring to purchase in car load lots at the following prices:

Oil Cake Meal	$65.00 F. O. B. Hamilton
Cotton Seed Meal	$62.65 Basis Hamilton freights Delivered price on application $63.65 F. O. B. Hamilton for immediate delivery from storage

Inquiries and purchases direct from Jas. Richardson & Sons, Ltd., Royal Bank Building, Toronto.
As this advertisement is written Oil Cake Meal is quoted at $70.00 F.O.B. Buffalo, and prices generally for concentrates have advanced in United States since our purchase. The Committee could therefore dispose of a portion of purchases at advanced prices across the line, and this action was contemplated in view of the slow demand in Ontario. The Committee has decided otherwise and while they last feeders now have the privilege of obtaining these concentrates at attractive prices.

Organization of Resources Committee,
Parliament Buildings, Toronto

How I Make Big Money Out of "Ornery" Horses

By J. A. BUTLER

ABOUT two years ago I witnessed up in New York State an exhibition of horse-training that opened my eyes. A man by the name of Mackley took a devil of a mean, vicious mare that hadn't been harnessed for seven months and in a few days had her gentle enough for a school girl to drive. Mackley had taken the mare off the owner's hands for $50 and just ten days after sold her for $175.00. A clear profit of $125.00 in ten days!

That started me investigating. I learned that Mackley had simply used the methods introduced by the famous horse trainer, Jesse Beery. Beery, I learned, used to go about the country giving wonderful exhibitions in colt-breaking and horse-training; but realizing that he could accomplish more by teaching his methods by mail, had given up his exhibition work to spread his horse-training secrets by mail-instruction. Mackley had studied Beery's Course in his spare time and in a few months was able to accomplish magical results with green colts and horses with bad habits.

Other Successes

Mackley's work showed me a way to make some nice money and I determined to take Prof. Beery's Course in horse-training—but before doing so I made further inquiries. Here are what a few of Beery's students said. I'll let them tell of their success in their own words.

Mr. S. L. Arrant writes: "Just to test Beery's methods, I bought the worst balky, kicking, fighting horse I could find. Paid $65.00 for him. After handling him only a few hours according to Beery's system I sold him for $135.00.

Mr. Dell Nicholson, Portland, Mich., writes: I have trained a four year old mare that was given up by everybody. Bought her for $35.00, and now have her so gentle, my little boy handles her. Wouldn't take $200.00 for her.

Dean L. Smith, Findley, Ohio, writes: By following Beery's instructions have changed a worthless, dangerous balker into a horse worth $225.00.

Everett McBlock, Elkhart, Ill., writes: Have just broken a pony to drive and taught it some tricks. Owner bought it for $17.50. Paid me $40 to train it. He just sold it to a show company for $150.00.

How I Work

The big source of my income is in buying up "ornery" colts and horses at bargain prices, and after training the animals, selling them at a good profit. However, I also pick up good money handling colts and training horses for others on a fee basis. For instance, a farmer had a beautiful driving bay that had the bad habit of shying. A piece of paper blowing across the road would set the horse crazy. The owner thought a great deal of the animal, but couldn't take chances on the shying habit. A friend of his for whom I had done some work put this man in touch with me and in a few hours I had the horse completely cured of the habit — for which job I received $50.

Curing Bad Habits

You can see from this that my work consists not only in breaking colts and "gentling" vicious horses, but in curing the various bad habits a horse can have—such as shying, balking, fear of automobiles, etc., pulling at hitching strap, pawing in the stall, etc. etc., Beery's methods of colt breaking are particularly amazing. Under the old way of handling green colts one usually had to half kill the horse as well as himself to accomplish anything—and then the colt was usually spoiled or hurt in some way or other. But, when you apply Beery's principles, there is no hard, long work or injury to the colt.

No one should have a biting, kicking or balky horse when it is so easy to cure these vicious habits. No one should attempt to break in a colt the old fashioned way when Beery's methods make the task so easy. To every horse owner, to every lover of horseflesh, my advice is to get acquainted with the Beery principles. You can not only make money for yourself, but you can do a world of good, particularly at this day when war-demands have placed a premium on horses.

Wonderful Book Free

I have been requested to state that Prof. Jesse Beery will send his remarkable booklet, "How to Break and Train Horses" free to those interested. It is a booklet well worth having as it reveals some startling information on horse-training. I have heard men who considered themselves expert horsemen say that the booklet was a revelation to them. There is no use in my going into details on the booklet when you can get it free for the asking.

Just drop a line to Prof. Jesse Beery, Dept. 721 Pleasant Hill, Ohio, and the booklet will be sent free by return mail. A postcard will do as well as a letter.

BIG SPARE-TIME MONEY FOR YOU

We want good, steady, reliable persons—resident representatives—who would like to make $10.00 to $25.00 extra cash each month without in any way interfering with their present duties.

It is easy, pleasant, profitable spare-time work—it does not require previous selling experience—we tell you how. Write for particulars. Just say on a postal card—"Send me your proposition."

AGENCY DIVISION

THE MACLEAN PUBLISHING CO., LTD.

143 University Avenue - - Toronto, Ontario

ing the hair of the pigs in a dirty, discolored condition.

4.—Crude castor oil is non-irritant, soothing, and quite destructive to lice. Where procurable it forms possibly the best application for this purpose. At present, the price of castor oil is too high to permit of its use for such purposes.

5.—Paraffin oil (low-grade) as now used in the herd of swine at the Central Experimental Farm, has proven non-irritant to the skin and quite effective as an insecticide. It is cheap, easily procurable, and colorless.

6.—Apply disinfectant washes (creolin, etc.) with a brush, broom, spray-pump, or in the case of the large herd, by the dipping method. Apply oils with a cloth or more conveniently still by using a large oil can with a handle and long spout. File a short section from off the end of the spout to increase the amount delivered. Apply a stream of oil over the neck, shoulders and along the back. The heat of the body will cause the application to spread over the body. A large number of hogs can be treated conveniently and quickly by such means.

7.—Repeat the application after ten days to destroy the lice or nits.

8.—If pigs are seen to be badly infested, a thorough clean-up of the premises would be indicated, using a strong creolin spray over all.

LARD HOGS FOR SOUTH AMERICA

To help South America swine raisers improve the quality of their droves, Armour and Company, of Chicago, are arranging to ship a large number of pure bred boars and gilts for use in Brazil and the Argentine. Duroc Jerseys and Poland Chinas predominate among the types that are being collected and conditioned for the first shipment south. Orders for other breeds are expected for future shipments.

South America presents some wonderful possibilities for raising good hogs, and the producers there are alive to their opportunity and anxious to secure the best breeding stock that is available.

GET RID OF CULL DAIRY STOCK

By M. H. Gardner

NO dairy breed produces a smaller number of undesirable animals than does the Holstein-Friesian, yet we have them; and now is the time for the close culling of your bred herds, while the culls will bring twice as much for beef as in normal times. In season and out of season I have advocated close culling; for with the high prices for feed and labor it is an economic waste all around to keep an unprofitable cow. We keep cows for milk; the calf is a by-product. No cow not returning a good profit on milk produced should be retained as a by-product producer. We may be sure that for the next few years the number of cows and heifer calves slaughtered in Europe for meat will be less than normal, and that the shortage will be made up by meat importations. We shall get our share of the trade, and it will have its effect on the market price to be obtained for cull stock.

PRODUCTION AND VALUE OF CREAMERY BUTTER

THE total production of creamery butter in Canada in 1917 was 87,404,366 lbs., value $34,227,188, as compared with 82,564,130 lbs., value $26,966,355 in 1916, and 83,991,453 lbs., value $24,385,052 in 1915. Quebec and Ontario together produce 72 p.c. of the total creamery butter in Canada. The production of Quebec in 1917 was 34,392,560 lbs., value $13,689,310, as compared with 34,323,275 lbs., value $11,516,148 in 1916 and 36,621,491 lbs., value $10,899,810 in 1915. Ontario in 1917 produced 28,714,352 lbs., value $11,219,029 as compared with 24,680,109 lbs., value $8,031,997, in 1916 and 26,414,120 lbs., value $7,534,653, in 1915. For all Canada the average wholesale price of creamery butter works out to 39 cents per lb. as compared with 33 cents in 1916 and 30 cents in 1915. By provinces, the price for 1917 is highest in British Columbia, 46 cents, the prices in the remaining provinces ranging as follows: New Brunswick and Nova Scotia, 41 cents; Prince Edward Island, 40 cents; Quebec, 40 cents; Ontario, 39 cents; Manitoba and Saskatchewan, 37 cents, and Alberta, 38 cents.

DAIRY FACTORIES AND PATRONS

THE report shows that the total number of creameries and cheese factories making returns in Canada in 1917 was 3,418, as compared with 3,446 in 1916 and 3,513 in 1915. Of the total in 1917, 949 are creameries, 1,900 are cheese factories, 549 are combined factories making butter and cheese and 20 are condensed milk factories. The great majority both of creameries and cheese factories are in Quebec and Ontario. In Quebec there are 598 creameries, 895 cheese factories, 482 combined factories and 1 condensed milk factory. In Ontario creameries number 154, cheese factories 923, combined factories 45 and condensed milk factories 13. In both of these provinces the number of cheese factories has increased, and the number of creameries has decreased, as compared with 1916. The total number of patrons (i.e. farmers supplying milk and cream) is 250,505 in 1917 as compared with 221,192 in 1916 and 212,927 in 1915. In 1917, the patrons numbered 81,784 in Quebec and 96,255 in Ontario.

J. J. ELLIOTT'S SALE

FEW chances come to the farmers of Canada to purchase high-class Shorthorns like that offered by J. J. Elliott in his big sale of 60 head of choice breeding cows, heifers and bulls. Mr. Elliott is a splendid judge of good cattle. During recent years he has come into prominence because of his winnings at all the leading Canadian shows and at the recent International at Chicago. Not only has he had the ability to judge cattle well, but he has recognized the value of paying good prices to secure the animal that measured up to his ideals. He has therefore gathered together a stable of cattle where uniformity of good quality is so marked that visitors are impressed with the high quality and splendid bloom of the splendid representatives of the best families of Shorthorns. His herdsman, Alex. Bruce, is a born artist, being a son of Mr. Bruce, the late herdsman for a leading Scotch leader of Shorthorn history and now managing the herd of the late J. J. Hill, the Great Northern Railway man. His work is well known to breeders in America. Added to the good feeding done, Mr. Elliott has made it a point of honor to have every animal on a sound breeding basis and to make no sale that he cannot fully guarantee. Buyers at this big sale will be insured of a square deal in every particular and mail orders are sure to receive the same courteous and honest treatment as do men who are present at the ringside. The sale will be held in the Winter Fair Buildings, at Guelph, on February 7th, and will be conducted by auctioneers Carey and Milne, both of whom are well known to Canadian buyers. It is expected that Canadian farmers will take the big bulk of the good things in spite of the fact that American buyers will want them. Canada is coming into prominence as a livestock breeding ground and our farmers recognize the need of top-notchers in their herds. Such animals as Rosa Hope 21st, and Newton Royalist need no introduction, and the young stuff from this barn are all beauties. Send for a catalog, mentioning FARMERS' MAGAZINE.

Coming Events

Jan. 14-17—Ottawa Winter Fair, Ottawa.

Jan. 14-March 29—Short Courses at Ontario Agricultural College.

Jan. 15-16—Dairymen's Association of Western Ontario, London, Ont.

February 3-7—Live Stock Breeders' Meetings, Toronto.

February 4, 5, 11 and 12—Live Stock Breeders' Meetings, Montreal.

Sale Dates

Feb. 5, 1919—John Miller, Ashburn, Ont. —Shorthorns.

Feb. 7, 1919—J. J. Elliott, R. R. 4, Guelph, Ont.— Shorthorns.

Feb. 7, 1919—Canadian Hereford Breeders' Association, Toronto, Ont. H. D. Smith, Secretary, R. R., Ancaster, Ont.

March 5, 1919—Guelph Fat Stock Club, Guelph, Ont.—Pure-bred stock. J. M. Duff, Secretary.

New Protection for Ford Owners

THERE are now 160,000 Ford cars in actual use in Canada.

The demand for service on these 160,000 cars has created a big business in repair parts.

The Ford Motor Company of Canada, Limited, is responsible not only for the cars that bear the Ford name, but for the Ford parts it manufactures and supplies.

It and its authorized representatives alone have the right to sell genuine Ford parts.

Yet, inferior repair parts not made by the Ford Company are being offered to the public as "Ford Parts"—or "Parts for Ford Cars."

The makers of these "spurious" parts have no interest—such as we have—in the performance of the Ford car. They are not under obligation—as we are—to serve Ford owners well.

The result is what might be expected.

Whereas parts made by the Ford Company are made to give Ford service, the inferior parts are simply "made to sell." *Genuine* Ford parts are made under rigid inspection in the Ford plant from Vanadium and other high-grade steel. The inferior parts, most of them, are cheaply made from low-carbon steel.

* * *

The Ford owner, who allows any but *genuine* Ford parts to be used in his car, suffers more than the actual loss on the inferior part. Other parts in his car are liable to damage from the inferior parts, and, of course, the Ford warranty behind his car becomes void! There is also the dissatisfaction arising from poor service and repeated breakages.

To protect Ford owners in this situation—

To make authorized Ford Service available to every Ford owner—

To give the widest possible distribution to *genuine* Ford parts—

The Ford Motor Company of Canada, Limited, has adopted a new policy.

Hereafter we will supply *genuine* Ford parts, not only to our regular Ford dealers, but to every reliable garage which is rendering service on Ford cars. Such garages will become authorized Ford Service Stations. They will display the Ford Service sign.

* * *

The result of this change in policy will be an immediate benefit to Ford owners.

Authorized Ford Service will be available everywhere.

Instead of 800 Ford Dealers—heretofore the most complete service offered on any automobile manufactured in Canada—there will be approximately 3,000 Ford Service Stations.

To get *genuine* Ford parts—and the Ford service expected from those parts—Ford owners will have only to look for the familiar Ford sign or the new Ford Service sign.

When the Ford Service sign is displayed it indicates that the garage owner has been authorized by this Company to render Ford service, *and has agreed to supply only genuine Ford Parts.*

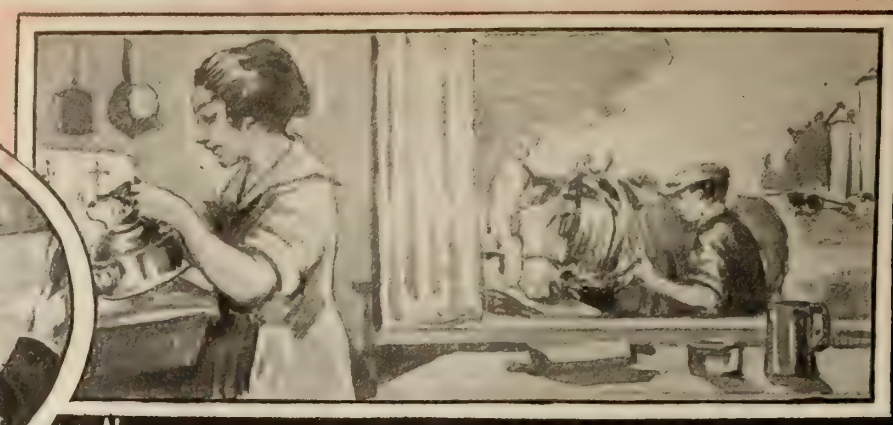
It will prove more than a convenience to Ford owners.

It will be a protection against the damage and expense he might incur through the use of inferior parts in his Ford.

Look for the Ford Service Sign

Ford Motor Company of Canada, Limited

Ford - - Ontario



Fairbanks-Morse Farm Machinery

Will increase the production of your farm in a period when greater production is a world necessity.

Decide now to give yourself an all-year present and introduce real efficiency into your farm work —genuine comfort and convenience into your home and eliminate a large part of your labor problems.

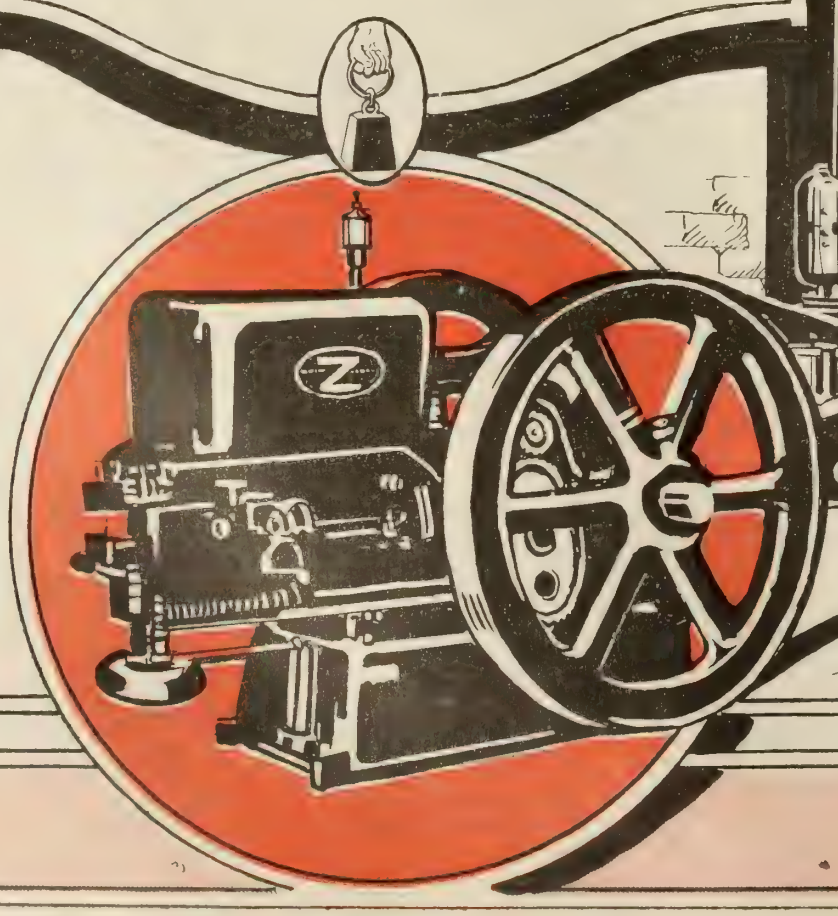
The "Z" is the engine that more than 150,000 farmers have proved the most efficient and economical engine for their farms.

Link the "Z" up with a Fairbanks-Morse or Type "F" Lighting Plant—let it operate your milking machine, your feed grinder, your ensilage cutter and all the other farm machinery. The "Z" engine—1½, 3 or 6 H.P.—develops more than rated power.

Write our nearest office to-day for information regarding the "Z" Engine and other Fairbanks-Morse Power Farm Machinery to increase production on your farm.

The Canadian Fairbanks-Morse Company, Limited

Montreal Ottawa Toronto Hamilton Windsor



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FARMERS' MAGAZINE

Canada's National Farm Magazine

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VOL. XII, No. 3 FEBRUARY 1, 1919 $1.50 Per Year 10 Cents Per Copy

The Scrub Sire

Canada's Great Handicap in the Race for the European Meat Markets

CANADIAN Cattle have, during the past few years, increased in numbers to a point where advantage may be taken of the tremendous market for beef opening up in Europe. During the war, our exports grew, but to maintain and increase our present trade means that we must make a determined effort to bring about a general improvement in quality, and to provide in volume, beef of the standard demanded by this market. To effect this improvement, it is necessary to

Do Away with Scrub and Nondescript Sires

The Scrub Sire has undoubtedly done much to prevent a more healthy development of Canadian agriculture. He is responsible for economic losses amounting to millions of dollars annually, for lean pocketbooks, unpaid mortgages and for much of the discontent upon many farms.

Good bulls are properly cared for, but scrubs generally run at large and roam the country at will. By-laws will not keep them within bounds, fences are almost valueless and the only effective remedy is castration. Many men who would be raisers of good cattle are powerless to prevent their inroads and become discouraged. They become a very real public menace and a heavy "drag" upon the Live Stock Industry. Every intelligent farmer to-day owes it to himself and to the cattle business of the country to

Use A Pure Bred Bull—Blood Counts

"A good bull is more than half the herd, but a scrub is mighty near all of it." This statement made by a practical stockman is correct. In all animal life the tendency is to revert to lower levels but by the use of good sires this is not only counteracted, but improvement will result because of the impress the sire makes upon the progeny. If the sire be a Scrub the tendency to go back is intensified and in a very few generations herds deteriorate and become absolute nondescripts.

That "Like Tends To Beget Like" has been proved beyond doubt. Many great herds carry the marks of some noted bull. Conformation, thickness and evenness of flesh, uniformity and quality may be stamped upon progeny by a good sire, whereas the very opposite characteristics follow in the path of the scrub.

The world's valuable markets are captured and held by cattle bearing the characters mentioned. The great beef-producing countries are the shrewdest and keenest buyers of high class bulls. The Argentine, one of our chief competitors, does not hesitate to pay the price and as a result it is able to hold annually the greatest bull show in the world. The bulls are valued because their progeny produces a high quality beef product which is in demand upon the world's best markets. It has been demonstrated that "It Pays to Pay for Quality." Canada's future depends largely upon the development of the Live Stock Industry. Consequently, The Scrub Sire Must Go. **Therefore, conserve and build up the herds—improve quality—finish thoroughly.**

Use a Pure Bred Bull

In newly settled parts of the country and in districts in which farmers are unable to purchase pure bred bulls for themselves

THE DOMINION LIVE STOCK BRANCH WILL LOAN GOOD SIRES

to associations organized in accordance with specified regulations.

During the past five years over 2000 bulls have been loaned to farmers' associations under this system

Farmers desiring to form an Association for the purpose of procuring sires for the season of 1919 should write immediately for booklet No. 3, issued by the Live Stock Branch. To be certain of receiving consideration, applications should be forwarded before March 1st. Address enquiries to R. S. Hamer, Chief of Cattle Division, Live Stock Branch, Department of Agriculture, Ottawa, Ontario.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA - CANADA

STANDARD FENCE

Our Ideas of Trading are the same as YOURS about a Fence

You look on the fence you put up to-day as a job that will stand for years to come.

It is an investment.

Good money goes into it, your time, wages for your help.

If you build a fence you want it to stay there, to look good, to stand up against the weather. You don't want the tantrums of your stock to knock it out of shape.

Well, then, we feel the same way about our business.

Back in 1904, when we started trading with farmers, we figured on *staying* in business.

We aimed to build up a trade and hold it; a trade that would grow a little every year; a sound, square, substantial trade with farmers.

We had to pass up a lot of "easy money" because we would not sell a poor fence. There used to be lots of business in cheap fences, too. There still is.

We let it go.

We wanted Standard Fence to mean good fence, and we knew the farmers would soon get to know it.

We wanted to put out a fence we could guarantee—on a positive money-back basis.

We do guarantee Standard Fence to be exactly as we represent it.

Fourteen years of that sort of trading have done exactly what we aimed they should. A great Fence institution has been built.

Now, *you* profit by our policy.

Building *only one quality* of Standard Fence in *large quantities*, we can keep down the cost. And because of the quality, Standard Fence never gives trouble to our customers, which would cost us money to adjust—a further saving in cost of doing business.

The result is that Standard Fence can now be laid down at as low a figure as many a fence that is not as good—*even lower than some.*

Think NOW about the Fence you will put up this Spring. Decide to do the job right. Write for our prices on Standard Fence—the lowest you can get on a guaranteed fence—the only kind of fence you will want to invest in. Write to-day.

STANDARD TUBE & FENCE CO.,
LIMITED

Woodstock, Ontario

Part of Experimental Farm O.A.College, Guelph.

Sheaf of Oats O.A.C. No. 72 strong strawed heavy yielding late Oats

Sheaf of O.A.C. No. 21 the best Barley in Ontario

Is 36 Bushels Per Acre A Satisfactory Yield of Oats?

Yet that has been the average yield of oats in Ontario during the last 37 years. In 1918 the average was higher. Last year it reached 45 bushels—the high-water mark for several years. But in 1916 it fell to 26½ bushels. And the same truth applies to every crop grown. On individual farms yields are away above these figures—but the average yields are comparatively low.

No One Thing Alone Can Raise This Yield

But several factors working together can do so. These are briefly:
(1) good seed; (2) thorough cultivation; (3) fertile soil; (4) well drained land; (5) proper rotation of crops.

Of all these factors good seed stands foremost. It is a waste of time and money to thoroughly prepare well-drained, fertile soil for a crop and then to sow inferior seed which can never produce the highest yields

Good seed means not only large, plump, sound, well-matured seed of strong vitality and free from impurities, but also the **very best variety of each crop obtainable.**

This Question of Variety is of the utmost importance. With the same cultivation, fertilizers and labor the variety best adapted to the particular soil will greatly outyield inferior varieties. The increase thus gained means very nearly clear profit—and it can be made more easily in no other way.

In order to discover the varieties best suited to Ontario, nearly 2,500 different varieties have been grown under test, while several new varieties have been originated, at the Ontario Agricultural College, Guelph. This experimental work has been conducted during a period of 25 years. After these long and thorough trials it has been definitely proven just what varieties will give best results in the Province.

These Are The Varieties Which Increase Yields

OATS

O.A.C. No. 72. Late, vigorous grower, good straw, spreading head, white grain, comparatively thin hull, high yielder of grain.

BANNER. Late, good straw, spreading head, white grain, Medium hull, medium yielder.

O.A.C. No. 3. Very early, good straw, spreading head, white grain, exceptionally thin in the hull, good yielder.

BARLEY

O.A.C. No. 21. Early, stiff straw, six-rowed head, grain bluish under the hull, good quality, heavy yielder.

SPRING WHEAT

MARQUIS. Early, good straw, beardless head, white chaff, red grain, excellent quality for bread production, good yielder.

WILD GOOSE. Fairly early, tall straw of medium strength, compact bearded head, hard grain, particularly suitable for the manufacture of macaroni, high yielder.

WINTER WHEAT

DAWSON'S GOLDEN CHAFF. Stiff straw, beardless head, red chaff, white grain, medium quality, high yielder; the most popular variety of winter wheat in Ontario for many years.

IMPERIAL AMBER. Tall straw of medium strength, bearded head, red chaff, red grain, good milling wheat, high yielder.

FIELD PEAS

ARTHUR. Medium late, medium straw, white blossom, medium-sized white grain, large yielder.

CANADIAN BEAUTY. Late, heavy straw, white blossom, large white grain, large yielder.

POTTER. Medium late, medium straw, white blossom, medium-sized white grain, large yielder.

GOLDEN VINE. Late, heavy straw, white blossom, small white grain, medium yielder.

FIELD BEANS

COMMON WHITE PEA. Early, medium straw, small white grain, good yielder.

BUCKWHEAT

ROUGH OR RYE. Early, medium yield of straw, grain with rough, thick hull, very heavy yielder.

SILVER HULL. Medium early, heavy yield of straw, grain with smooth hull, fair yielder.

SWEET CORN FOR TABLE USE

GOLDEN BANTAM. Early, yellow, eight-rowed ears, best of about fifty varieties for home use.

FLINT CORN

LONGFELLOW. Early, medium yield of stalks, yellow, eight-rowed ears, good yielder of grain, suitable for silage in more northerly districts of older Ontario.

SALZER'S NORTH DAKOTA. Medium early, heavy yielder of stalks, white, eight-rowed ears, crop suitable for husking or for the silo in Central Ontario.

DENT CORN

WHITE CAP YELLOW DENT. Medium early to medium late, according to strain, grown for grain in southern Ontario and for fodder and silage in Central Ontario.

WISCONSIN No. 7. Medium in earliness, usually matures in the extreme southerly parts of Ontario, suitable for the silo in the warmer parts of the Province.

MILLET

JAPANESE. Late, heavy producer of green fodder and of hay, uncertain producer of seed, which is usually high in price.

SIBERIAN. Early, red seed, medium producer of both seed and fodder.

HUNGARIAN GRASS. Early, light and dark seed, medium producer of both seed and fodder.

RAPE

DWARF ESSEX. Average yield more than corn, used as pasture or as green fodder, relished by cattle, sheep and hogs, very fattening, taints milk when fed to dairy cows.

POTATOES

IRISH COBBLER. Early, white, good yielder, good quality.

GREEN MOUNTAIN. Late, white, excellent shape, good yielder, good quality.

MANGELS

SUTTON'S MAMMOTH LONG RED. High yielder.

SUGAR MANGELS

GIANT WHITE FEEDING. Intermediate in length, sugar content between mangels and sugar beets, yield of roots lower than mangels.

ROYAL GIANT. Pink skin, intermediate in length, sugar content between mangels and sugar beets, yield per acre lower than mangels.

SWEDE TURNIPS

GARTON'S MODEL. Bronze top, high yielder, good quality.

GIANT KING. Purple top, high yielder, good quality.

PERFECT MODEL. Purple top, high yielder, excellent quality.

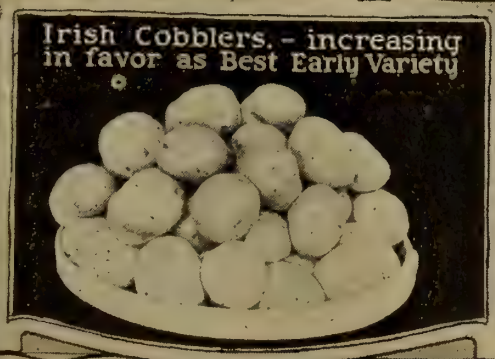
FALL TURNIPS

RED TOP WHITE GLOBE. Very high yielder and excellent for early use in the fall.

FIELD CARROTS

MAMMOTH SHORT WHITE. Conical in form, good quality, high yielder. (All short white carrots offered by Ontario seedsmen are very similar.)

Not all of Ontario's field crops are mentioned above, but Circular No. 10, "Variety of Farm Crops," may be secured upon request of the Department of Agriculture, which gives a list of the best varieties. For exact information on the special variety of any one crop best suited for your land, write to Dr. C. A. Zavitz, Ontario Agricultural College, Guelph, Ontario. When writing, mention the kind of soil you have, the crop rotation you have been following and the prevailing climatic conditions.



Irish Cobblers.- increasing in favor as Best Early Variety

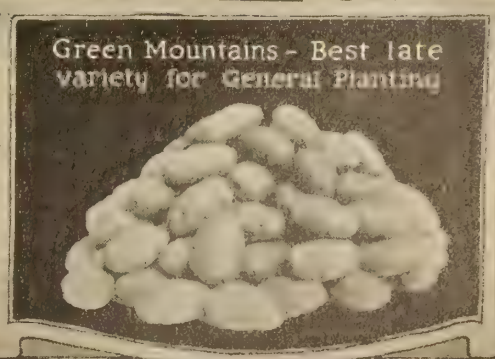
The Ontario Department of Agriculture

Parliament Buildings **Toronto**

Hon. George S. Henry
Minister of Agriculture

ONTARIO

Dr. G. C. Creelman
Commissioner of Agriculture



Green Mountains - Best late variety for General Planting

The Right Thing In the Right Place

Nowadays there is a good deal being said about "efficiency." Many books have been written on the subject, dealing both with industrial efficiency and personal efficiency. But the consideration of efficiency is not new—it is as old as civilization itself.

To parody an old saying — some people are born efficient, some acquire efficiency and others have efficiency thrust upon them. Most people come in class two—they must acquire efficiency; and the first rule is, to have a place for everything and everything in its place.

Take, for instance, the question of preserving health and meeting efficiently those emergencies when accident threatens life or limb. The family medicine chest, stocked with time-proved remedies like Dr. Thomas' Eclectric Oil is a boon on such occasions.

Dr. Thomas' Eclectric Oil is really almost a medicine chest in itself, it has such a wide variety of uses and can be applied either internally or externally as occasion may require.

It is the most effective remedy for a long list of things, including cuts, burns, scalds, bruises, sprains, stiffness of the joints, sore chest, sore throat, coughs, colds and croup. In external treatment the skin readily absorbs the healing oil and its pain-soothing powers quickly bring relief from suffering. For internal use a very small dose will have a very big and beneficial effect.

And in the stable, no less than in the house. Dr. Thomas' Eclectric Oil has a wonderful range of usefulness. The lower animals have their aches and pains, their wounds and bruises, and will often catch cold. In any such case treatment with Dr. Thomas' Eclectric Oil will be of great service and will often result in saving costly visits of the veterinary surgeon.

A bottle of this healing oil in the household medicine chest, and another in the stable are certainly the right things in the right place. This remedy is inexpensive as well as absolutely dependable. But see that you get the genuine article, for many imitations are offered. The genuine has the name "Dr. Thomas' Eclectric Oil" blown in the bottle.

Price 25 cents at All Dealers

Northrop & Lyman Co., Limited
Toronto

RENNIE'S SEED ANNUAL 1919

A CATALOGUE containing complete and interesting information on how to improve and increase your productions of both flowers and vegetables. This catalogue is superbly illustrated in colors and shows practically all the varieties of garden plants which can be grown successfully.

Everyone With a Garden,

whether large or small, will find this book full of useful and practical gardening hints. Let it help you make your garden a great success this year.

Expert advice is given on what to plant, when to plant, and how to plant under various soil conditions. Follow this advice and your garden will be the envy of your fellow gardeners.

Send for a free copy
It will be mailed on request

Wm. RENNIE Co., Limited
King and Market Sts.
TORONTO

FARMERS' MAGAZINE
Canada's National Farm Magazine

JOSEPH MCGOEY, *Manager* F. M. CHAPMAN, *Managing Editor*
ETHEL M. CHAPMAN, *Associate Editor*

An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.

—Lloyd George.

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Sales and Wants
THE FARMER'S EXCHANGE
(SEMI-MONTHLY)

5 cents a word—per insertion

Rates for Classified Ads.—Insertions in this column five cents per word per issue. Each initial, four or less figures in one number count as one word. Name and address is counted as part of the ad. All orders must be accompanied by cash. Forms for the issue close three days preceding each issue. Publication dates are 1st and 15th of the month.

COCKERELS, BABY CHICKS, HATCHing eggs, from bred to lay S.C. White Leghorns. Catalogue free. Cooksville Poultry Farm, Cooksville, Ont. (Feb. 15)

BOOKS FOR SALE

Ideas about how new money can be made on the farm will always attract the wide-awake farmer. If you want a book that is full to the brim of hints and ideas about farming in every department, send for **Making the Farm Pay**, by G. C. Bowsfield. It will be mailed to your address for $1.00. Write the
Technical Book Department,
Address Farmers' Magazine

HARNESS FOR SALE

A SET OF SINGLE HARNESS IN first-class condition, practically good as new. No further use for them as the owner has purchased an auto. Price $25. Box 35, Farmers' Magazine, 143 University Ave., Toronto.

CLOVER SEED WANTED

I WANT A SMALL SUPPLY OF RED clover and also timothy seed. Must be free from bad weeds. Write stating price. Box 18, Farmers' Magazine, 143 University Ave., Toronto.

SEED OATS AND WHEAT

MARQUIS WHEAT, ONTARIO GROWN for three years and O.A.C. No. 72 Oats for sale. Book your orders now. Wheat, $2.50; oats, $1.00, bags extra. Grasmere Farm, 75 Hampton Ave., Toronto.

BAILEY SEED CORN

FULLY DEVELOPED, HAND SELECTed, crib cured, guaranteed highest germination. Save dealers' profit by buying direct from grower. Special prices to farmer's clubs. See sample at Chatham show. Walter Fulmer, Kingsville, Ont.

LAND FOR SALE

SECTION IN ALBERTA, UNIMPROVED. No waste. School close by. Reasonable price. Apply Box 353, Barrie, Ont. (Feb. 1)

320 ACRES, 125 MILES WEST OF Winnipeg. 266 acres cultivated. Good buildings, splendid soil. With or without equipment. Apply W. Harvey, Methven, Manitoba. (Feb. 1)

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FARMERS' MAGAZINE
143-153 University Avenue
TORONTO - ONTARIO

LIVE STOCK MEETINGS

The following is a list of the annual meetings of the Live Stock Record Association, incorporated under the National Live Stock Records system, to be held during the first two weeks of February. Included is a list of the directors' meetings. The Toronto meetings will be held at the Carls-Rite Hotel.

Toronto Meetings

Monday, Feb. 3—

2.00 p.m.—Canadian Swine Breeders' Association, Directors' Meeting.
2.30 p.m.—Canadian Thoroughbred Horse Society, Directors' Meeting.
3.00 p.m.—Canadian Thoroughbred Horse Society, Annual Meeting.
4.00 p.m.—Canadian Pony Society, Directors' Meeting.
8.00 p.m.—Dominion Shorthorn Breeders' Association, Directors' Meeting, Prince George Hotel.
8.00 p.m.—Canadian Swine Breeders' Association, Annual Meeting.
8.00 p.m.—Canadian Pony Society, Annual Meeting.

Tuesday, Feb. 4—

9.00 a.m.—Ontario Swine Breeders' Association, Directors' Meeting.
9.30 a.m.—Canadian Trotting Association, Directors' Meeting.
10.00 a.m.—Ontario Swine Breeders' Association, Annual Meeting.
10.00 a.m.—Dominion Shorthorn Breeders' Association, Annual Meeting, Prince George Hotel.
11.00 a.m.—Canadian Standard Bred Horse Society, Directors' Meeting.
1.00 p.m.—Ontario Berkshire Club.
2.00 p.m.—Ontario Yorkshire Club.
2.00 p.m.—Canadian Trotting Association, Annual Meeting.
4.00 p.m.—Canadian Sheep Breeders' Association, Directors' Meeting.
4.00 p.m.—Canadian Jersey Cattle Club, Directors' Meeting.
8.00 p.m.—Canadian Sheep Breeders' Association, Annual Meeting.
8.00 p.m.—Canadian Standard Bred Horse Society, Annual Meeting.

Wednesday, Feb. 5—

10.00 a.m.—Ontario Sheep Breeders' Association, Directors' Meeting.
11.00 a.m.—Canadian Jersey Cattle Club, Annual Meeting.
2.00 p.m.—Canadian Kennel Club, Directors' Meeting.
2.00 p.m.—Clydesdale Horse Association of Canada, Directors' Meeting.
2.00 p.m.—Ontario Cattle Breeders, Directors' Meeting.
2.30 p.m.—Ontario Cattle Breeders, Annual Meeting.
4.00 p.m.—Canadian Hackney Horse Society, Directors' Meeting.
8.00 p.m.—Canadian Hackney Horse Society, Annual Meeting.
8.00 p.m.—Canadian Kennel Club, Annual Meeting.
8.00 p.m.—Ontario Sheep Breeders' Association, Annual Meeting.

Thursday, Feb. 6—

9.00 a.m.—Canadian Shire Horse Association, Directors' Meeting.
10.00 a.m.—Canadian Shire Horse Association, Annual Meeting.
10.30 a.m.—Clydesdale Horse Association of Canada, Annual Meeting.
2.00 p.m.—Canadian Hereford Association, Directors' Meeting.
3.00 p.m.—Canadian Hereford Association, Annual Meeting.
7.30 p.m.—Ontario Horse Breeders, Directors' Meeting.
8.00 p.m.—Ontario Horse Breeders, Annual Meeting.

Friday, Feb. 7—

10.00 a.m.—Eastern Canada Live Stock Union, Annual Meeting.

Montreal Meetings

Tuesday, Feb. 4—

2.00 a.m.—French Canadian Cattle Breeders' Association, Annual Meeting.
4.00 p.m.—French Canadian Horse Breeders' Association, Annual Meeting.
7.00 p.m.—Quebec Sheep Breeders' Association.
8.30 p.m.—Quebec Swine Breeders' Association.

Wednesday, Feb. 5—

10.00 a.m.—General Breeders' Association of the Province of Quebec.

Tuesday, Feb. 11—

10.00 a.m.—Canadian Ayrshire Breeders' Association, Directors' Meeting.
10.00 a.m.—Canadian Ayrshire Breeders' Association Annual Meeting.

GROW GRAINS FOR STRAW

AS long as small grains will pay the cost of production the straw is a sufficient profit to justify the stock raiser in growing it. Sawdust and even dry leaves are useful if straw is lacking.

It is a rare day when all kinds of stock should not be turned out for a few hours at least. Thirsty cattle coming suddenly out of an overheated barn may be hurt by drinking ice water, but the cold air has the same effect where the barn is warm. Tank heaters are in common use in cold latitudes to take the chill off the water.

In the case of heavy doors nothing but the best of rollers should be used, the track of iron, put up as true and solid as it is possible to have it, and then watch and keep clean the groove in which it runs at the bottom. Box-stalls should be built wherever a roof can be extended along the sides without cutting off the light and air from the main building.

A Practical Book

That tells the farmer how to make his own Farm Buildings.

On pages 54 and 55 of the book entitled "What the Farmer can do with Concrete" will be found valuable information on Concrete Watering Troughs and Tanks—and how to build them.

This is one of the most important uses to which concrete can be put. Concrete tanks are easily built, require no repairs, do not rot, will not crack. Being easily cleaned they are sanitary—the walls do not absorb impurities from the water as in the case of wood construction.

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T. E. BISSELL COMPANY, LTD., ELORA, ONT.

See Advt. also on page 40.

THE

DOMINION BANK

At the Forty-Eighth Annual General Meeting of the Shareholders of The Dominion Bank, held at the Head Office, in Toronto, on 29th January, 1919, the following Statement of the affairs of the Bank as on the 31st December, 1918, was submitted:

GENERAL STATEMENT

LIABILITIES

Capital Stock paid in		$ 6,000,000 00
Reserve Fund	$ 7,000,000 00	
Balance of Profit and Loss Account carried forward	446,503 22	
Dividend No. 145, payable 2nd January, 1919	180,000 00	
Former Dividends unclaimed	3,690 00	
		7,630,193 22
Total Liabilities to Shareholders		$ 13,630,193 22
Notes in Circulation	9,858,533 00	
Due to Dominion Government	11,000,000 00	
Deposits not bearing interest	$33,843,584 77	
Deposits bearing interest, including interest accrued to date	62,264,126 61	
	96,107,711 38	
Balances due to other Banks in Canada	1,131,994 04	
Balances due to Banks and Banking Correspondents elsewhere than in Canada	1,002,534 64	
Bills Payable	86,520 00	
Acceptances under Letters of Credit	305,616 76	
Liabilities not included in the foregoing	383,171 94	
Total Public Liabilities		$119,876,081 76
		$133,506,274 98

ASSETS

Gold and Silver Coin	$ 1,940,780 53	
Dominion Government Notes	13,473,468 00	
Deposit with Central Gold Reserves	4,600,000 00	
Notes of other Banks	1,037,315 49	
Cheques on other Banks	4,995,232 10	
Balances due by other Banks in Canada	7,779 15	
Balances due by Banks and Banking Correspondents elsewhere than in Canada	2,443,405 46	
	$28,497,980 73	
Dominion and Provincial Government Securities, not exceeding market value	9,966,508 15	
Canadian Municipal Securities, and British, Foreign and Colonial Public Securities other than Canadian, not exceeding market value	13,009,830 54	
Railway and other Bonds, Debentures and Stocks, not exceeding market value	2,376,325 95	
Call and Short (not exceeding thirty days) Loans in Canada on Bonds, Debentures and Stocks	8,408,800 29	
Call and Short (not exceeding thirty days) Loans elsewhere than in Canada	1,269,403 93	
		$ 63,528,849 59
Other Current Loans and Discounts in Canada (less rebate of interest)	64,092,006 46	
Other Current Loans and Discounts elsewhere than in Canada (less rebate of interest)	26,782 18	
Liabilities of Customers under Letters of Credit, as per contra	305,616 76	
Real Estate other than Bank Premises	11,470 43	
Overdue Debts (estimated loss provided for)	85,605 91	
Bank Premises, at not more than cost, less amounts written off	5,128,854 04	
Deposit with the Minister of Finance for the purposes of the Circulation Fund	304,500 00	
Mortgages on Real Estate sold	22,589 61	
		69,977,425 39
		$133,506,274 98

E. B. OSLER, *President.* C. A. BOGERT, *General Manager.*

AUDITORS' REPORT TO SHAREHOLDERS

We have compared the above Balance Sheet with the books and accounts at the Chief Office of The Dominion Bank, and the certified returns received from its Branches, and after checking the cash and verifying the securities at the Chief Office and certain of the principal Branches on December 31st, 1918, we certify that, in our opinion, such Balance Sheet exhibits a true and correct view of the state of the Bank's affairs, according to the best of our information, the explanations given to us and as shown by the books of the Bank.

In addition to the examinations mentioned, the cash and securities at the Chief Office and certain of the principal Branches were checked and verified by us at another time during the year and found to be in accord with the books of the Bank.

All information and explanations required have been given to us and all transactions of the Bank which have come under our notice have, in our opinion, been within the powers of the Bank.

G. T. CLARKSON } of Clarkson, Gordon &
R. J. DILWORTH } Dilworth, C.A.

TORONTO, January 21st, 1919.

Investments & Insurance
For the Farmer

VICTORY LOAN TOTALS

THE final tables of the Victory Loan subscriptions were made known this week. The total now is shown to be $695,389,227. The new report shows that Ontario's subscriptions now amount to $336,055,350, which is far beyond any other province, and almost fifty per cent. of the total from all Canada. An astonishing record for a number of subscribers is revealed by this report. Taking the Dominion as a whole, one person in every 7.08 subscribed, compared with one in 9.02 in 1917. In Ontario one in every 4.72 of the population subscribed, a record not approached by any other province except British Columbia, with one in 4.98. In the Dominion there were 1,104,107 subscribers, compared with 874,331 in 1917. In per capita subscriptions Ontario also was far in the lead, with $131.25, British Columbia coming second, with $91.58. The Dominion as a whole averaged $88.91 per capita, compared with $53.37 the previous year. It is announced from Ottawa that of the total subscribed the Dominion will accept $660,000,000, the balance being turned back to some of the largest subscribers, as had been understood from the first:

Amount of subscription for 1917 loan	$421,194,960
Amount of subscription for 1918 loan	695,389,277
Number of applications for 1917 loan	874,331
Number of applications for 1918 loan	1,104,107

A FARMERS' FIRE INS. CO.

By F. M. C.

A FARMERS' Mutual Fire Insurance Co. that has just completed a successful year is the Maple Leaf Farmers' Mutual of Columbus, Ontario. The total receipts for the year in cash were $24,810, the total expenditures $23,523. The insurance losses paid totalled $16,883. The policies in force now amount to nearly eight millions. They have assets amounting to $39,804 in cash, and premium notes for $206,000 with no liabilities. It is singular that out of 39 losses on which payments were made, 7 were caused by lightning. On one big barn in Pickering township a payment of $4,750 was made.

THE THRIFT HABIT

By Guy Emerson
Vice-President National Bank of Commerce, N.Y.

THE fundamental fact is that out of the necessities of war has developed a great group of thirty millions of temporary investors. I say temporary, because in no sense can this group of people be called investors in the same way that the carefully developed 300,000 bondholders existing before the war could be called investors. It must be clear, however, that this larger group has taken the first step, and a very great first step it is, if the business men of this country have vision enough to make the second and third and fourth steps easy and inevitable.

The question of savings in this country has not been perfectly handled in the past. Saving has not been made as easy as spending. It has not been made attractive. It has been permitted to associate itself with all things gloomy, negative and colorless. The first thing we have got to do is to put a little joy into saving. We have got to give a new spirit to it, a new color to it, and a new life to it.

After this is done, it must be made easy to save, and the saving must be taken to the individual.

STARTING A FARM WITH LITTLE CAPITAL

By George L. Parrott

THE majority of men who start to farm must of necessity rent, and the selection of the rented farm is nearly as important as the selection of the farm which it is intended to buy. There are several things essential to a good farm. To begin with it must contain mostly workable land. A farm with only a small percentage of work land is decidedly a poor investment. The land should not only be workable but care should be taken to see that it is not land that is run out. Such land takes too long to get into shape before it can be made to produce profitably. The next thing that looms up big is its adaptability to mixed farming. Such things as good woods, a sugar-bush, an orchard —which at first appear insignificant —help materially to increase the farmer's income.

After a suitable farm has been selected the next thing is the rent. A man starting with a small capital cannot pay a big rent. Care should be taken, however, not to let the amount of the rent determine the farm to be selected. Better to pay a little higher rent and get a good farm than to pay less and get on a poor one. The amount of the rent having been settled, the next thing to be considered is the judicious expenditure of the capital on hand. The first absolute necessity is a team of good horses. It is a mistake to buy a team of "plugs." They eat just as much and only do about half the work a good team does. For a fair team of horses at present prices one will pay about $300. This will prove the biggest item.

A few cows to start with the first year will have to be bought, and as in the case of the horses care should be taken to see that they are good animals. An inexperienced hand should secure the services of a farmer who understands cattle, in the selection of the ones he intends to buy. A small flock of hens will do a lot towards keeping the house and will prove a profitable investment.

The necessary implements will include a plough, a disc or cultivator, a drag, a mower, a hay rake, and a seeder. A good way to buy these is to watch the sales which are held throughout the country. Very often quite good implements can be secured at low prices. Such things as a binder, corn-cutter, etc., can be left for a couple of years and the grain may be cut by a neighbor. A set of harness and a good lumber wagon, upon which a hay rack can be fitted, must however be included.

With the above outfit one can start farming. It must not be supposed, however, that all these can be bought without going into debt for at least part of them. To pay off this debt cash crops will do the most. Such crops as wheat, beans, etc., which can be turned into money, will be found profitable by the intended farmer. Indeed the laying out of the first year's crop should be planned carefully. The amount and kind of feed necessary for the wintering of the stock, crops which can be turned into cash, a system of rotation, all these must be taken into consideration.

Summing up then, it will be seen that the above business cannot be done without a knowledge of farming in a practical way. The man who intends to farm should fit himself for it by subscribing for a good farm magazine such as the Farmers' Magazine and studying it together with good, practical, books on the business of farming. Only by knowing how and understanding his business can any farmer become a success.

CANADA AND UNITED STATES

THE Canadian dollar suffers nearly 2 per cent. discount on the New York market. Economists say that this is because of the unfavorable trade balance existing between the two countries. A writer in *The Financial Post* from New York says that the trade between the United States and Canada in the past year reached a grand total of $1,346,000,000, according to an estimate which becomes possible with the release of the latest figures of commerce. This figure establishes an entirely new record for Canadian-American business for any one calendar year. The aggregate for the year 1918 is more than three times greater than the aggregate for 1914, and exceeds the previous year, 1917, by more than $100,000,000.

Comparative figures of trade over the Canadian border for a period of eight years make the following interesting record of progress:

Calendar Year	U.S. Imports from Canada	U.S. Exports to Canada	Total Trade
1912..	$120 851.025	$375,123,769	$ 495,974,794
1913..	142.142 939	403.289 234	545,432,173
1914..	164 031.910	310.616.232	474.648.142
1915..	177.594 210	345.015 836	522.640.046
1916..	237.249.040	604.908 190	842 157.230
1917..	413 674 846	829,972,331	1,243,651,177
1918*.	456,825,000	889,190,000	1,346,015,000

*Month of December estimated.

Analysis of the American foreign trade statistics reveals that in the month of November Canada stepped up into second place in the U.S. foreign trade list. England, with purchases here totalling $164,000,000 for the month alone, exceeded Canada's $87,000,000. France was third with $54,000,000, Italy followed with $42,000,000 and Japan with $25,000,000. During November Uncle Sam purchased to a larger amount in Canada than in any other country. U.S. imports from Canada aggregated $45,000,000. U.S. imports from Japan with a total of $25,000,000 were next in importance, imports from the British East Indies reached $20,000,000, and imports from other countries scaled down from these totals.

U.S. imports from Canada during the month represented nearly 18 per cent. of America's foreign purchases and for the eleven months of the year nearly 14 per cent., the abnormally heavy volume of American buying in the Dominion being immediately attributable to the U.S. Government war orders which continued to be placed across the border throughout the year. While there was an immediate cessation of this buying with the signing of the armistice, it is generally understood that a measure of compensation will be allowed by the U.S. Government for cancelled contracts.

ONTARIO FARMERS' CONVENTION

From the *Grain Growers' Guide*

FIFTEEN hundred delegates, representing a membership of 25,000 Ontario farmers, constituted the annual convention of the United Farmers of Ontario held in Toronto two weeks ago. It was the greatest farmers' convention ever held in Eastern Canada. It was the voice of the new spirit which is rapidly spreading over all the eastern provinces. Pessimists have been trying to tell us that the Ontario farmer is not so progressive politically as the westerner. The eastern protectionists have told us that the Ontario farmer was well satisfied with the tariff because of his "home market" in the cities which the tariff reduction would destroy. The financial interests have told us that the Ontario farmer was "safe and sane" and would not unite with the "wild-eyed visionaries of the West."

But what really happened? The United Farmers of Ontario in their convention adopted the Farmers' Platform unanimously. In fact, it did not go far enough for them. They amended it slightly to express more fully the progressive spirit of the Ontario farmers. They added a clause to provide that whenever the United States tariff is lowered against Canada the Canadian tariff shall be lowered to the same extent. They stated that as between free trade with Britain and the United States the greatest benefit to Canada would come from free trade with the States to the south. In this declaration they stated a plain and simple truth which a glance at trade figures clearly demonstrates.

Another amendment in the platform passed by the U.F.O. convention declared for the "abolition" instead of the "reform" of the Senate. Every political party in Canada for the past 25 years has been pledged to "reform" the Senate. But their pledges have been pure buncombe intended solely to fool the voters. The Ontario farmers are sick of the talk of "reform" and would put the Senate out of business altogether. There will be much sympathy with their proposal. The Senate has never done anything to justify its existence and the cost of its upkeep. But it is a mighty handy place to which worn-out politicians may be "translated," and it affords plums for the party faithful.

The other amendment made by the U. F. O. provided for the prohibition of the manufacture, sale and importation of intoxicating liquors. This formed a plank in the original Farmers' Platform but was overlooked in the revision because of the impression that the matter was settled. The Ontario farmers were wise in restoring this plank. Altogether the consideration of the Farmers' platform by the United Farmers of Ontario displayed a high order of statesmanship. They will find the conventions of the organized farmers sympathetically inclined towards their amendments. The organized farmers of Canada are one in spirit and purpose, and the old political order in Canada will be abolished by their united action.

LYONS BIG FAIR

THE Lyons Fair in France will be held in March. The final arrangements for the Fair indicate that Canada's exhibit there should be very creditable. In all, 50 booths have been secured, allotted as follows: C.P.R., 5; Canadian National Railways, 3; Department of Agriculture, 3; Department of Trade and Commerce, 1; Department of Mines, 1; Forestry Branch, 1; Fisheries, 1. The remaining 35 booths have been divided among 53 manufacturers according to the allotment made by the C.M.A. Many more booths could have been filled, as applications for space began to pour in latterly.

WEST REQUIRES ONTARIO OATS

IT is estimated that 500,000 bushels of oats suitable for seeding purposes may be obtained from Ontario for Southern Saskatchewan and Alberta, says the Seed Branch. The District Representatives of the Provincial Department of Agriculture have been requested to assist in procuring this supply, but the prevalence of wild oats throughout parts of Central and Western Ontario will prevent many farmers from taking advantage of the premium offered. There is a plentiful supply in Manitoba of oats polluted with wild oats, which may be obtained at a lower cost, but it is hoped that Ontario farmers can supply oats that are practically free from wild oats and get them delivered in good time for seeding in Saskatchewan and Alberta.

IMPORTS OF ANIMALS

In 1916 the value of the living animals imported into Canada for consumption was $981,866, in 1917 it was $2,522,480 and last year it was $1,614,165, according to the Dominion Bureau of Statistics.

SILK IMPORTATIONS

The value of the silk imported into Canada for consumption in 1916, was $12,452,152; in 1917, $13,697,490, and in 1918, $19,712,320, according to the Dominion Bureau of Statistics.

Fertilizers Pay on Wheat

Experimental Tests Show that Fertilizers Increase Wheat Yields

1918 Tests at Michigan Agricultural Experimental Station

O—Unfertilized. F—Fertilized.

Grain from equal Fertilized and Unfertilized Areas

Gains from Fertilizers obtained in Experimental Tests:

Ontario Agricultural Experimental Union reports—
5.2 bus. per acre Fall Wheat gained.
8.3 bus. " " Spring " " } Average of 5 years test.

Indiana Experimental Station reports—
7.06 bus. per acre Wheat gained. Average of 10 years test.

"Exactly what should be used will depend upon the local conditions, but *in any case it should be remembered that it will pay better to use liberal amounts of fertilizer on wheat now than in ordinary times,* because wheat prices are likely to remain high and it will not require much increase in the yield to pay for liberal fertilization."

—PROF. A. T. WIANCKO, B.S.A., in "Maintain the Wheat Acreage and Increase the Yield for 1919." Published by Purdue University, Lafayette, Indiana.

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SPECIAL BUGGY HARNESS. Handsome, [illegible] buggy harness, rawhide lined, track style, 56in. traces. Shaft wrap belly band, [illegible] and [illegible] collar [illegible] buckleover [illegible] traces double and [illegible] throughout; [illegible] in genuine [illegible] and neat good. This is the [illegible] harness for the price in Canada, strong and [illegible] every inch of it. Price only $35 Special. Ask your dealer or order from factory. Our Guarantee: If it does not satisfy you, return it at our expense.

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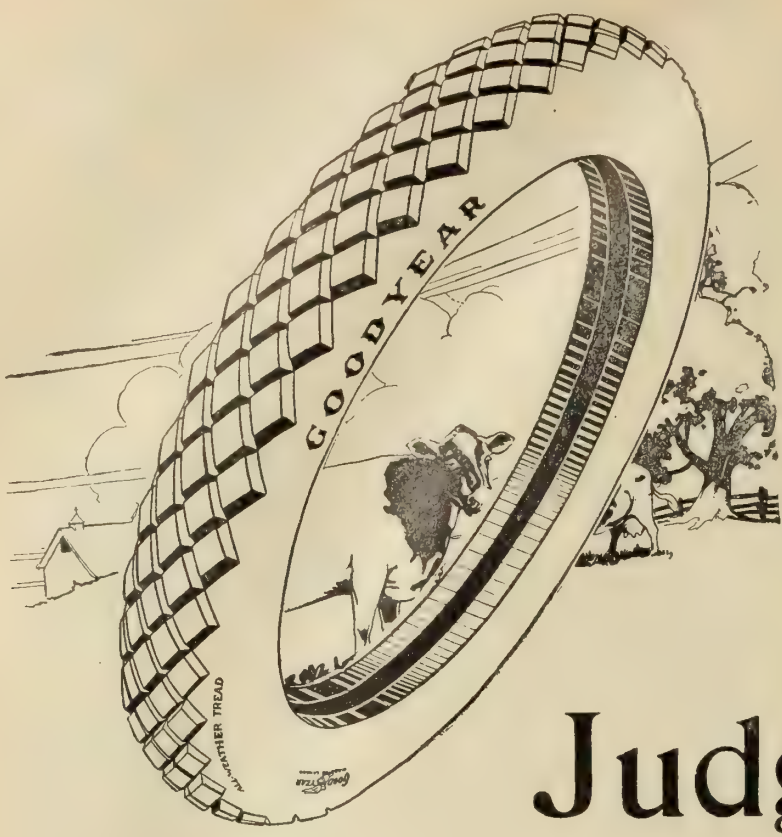


How Do You Judge a Holstein?

YOU wouldn't buy a milk-cow at so much a pound. No, you want to know how much milk she will give. A cow at $200 might be away cheaper than one at $125—certainly the real producer is the one the prosperous farmer buys.

Now, look on your tires as producers.

Judge them as you judge Holsteins.

You know absolutely that some tires give more miles of service than other tires.

You know that the tires that give the most miles per dollar are the best buy.

Then buy your tires on the cost-per-mile reputation.

Goodyear Tires built their world-wide business because they give that low-cost-per-mile. Don't let the lowest FIRST-COST TIRE warp your good sense of economy and satisfaction. Look up the Goodyear Service Station Dealer and invest in Goodyears.

The Goodyear Tire & Rubber Co.
of Canada, Limited

GOODYEAR
MADE IN CANADA

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. FEBRUARY 1, 1919 No. 3

BREEDERS' PROBLEMS *in* AMERICA

Reciprocal Trade Relations Held Up

By FRANK D. TOMSON

I TAKE it that the conditions in Canada are not so very different from those that exist in the States. Your Eastern country has been long settled and devoted to farming in smaller acreages. The necessity of livestock improvement has long since made its impress. Your people have manifested an intelligence and alertness and thrift along this line that commands the admiration of all who make a study of such matters.

Out through the Western provinces your conditions are much like the conditions in our Western states in that they are just now in the stage of their initial development, except that we have been a longer time in working out this development. Much of your country in the Western provinces is virgin country and the people who locate there have the impression no doubt, at least many of them have, that the soil is inexhaustible, that the greatest profits lie in grain growing, and so grain growing seems to have been the principal industry where the plow has broken the sod. But the ultimate prosperity of those Western districts, just as it has been through Ontario, will be the adoption of livestock husbandry. It is through this means that prosperity may be a permanent blessing and experience. There can be no other plan as safe. You farmers and ranchmen out in those fertile districts may rely to a very great extent on the breeders in Eastern Canada and the States for your foundation stock.

All Beef Breeds There

Such information as I have gleaned concerning your situation is that the Shorthorn is the leading breed among cattle men. Yet evidence is not lacking that the aggressiveness of the supporters of other breeds has resulted in placing a considerable representation of those breeds there. We do not question the dependability of the Shorthorn for the West, because the experience through the States has demonstrated the breed's usefulness in whatever region it has been employed. Just as the Shorthorn has played the most important part in bovine improvement and prosperity throughout Eastern Canada, it may be safely relied upon to work out the financial salvation of those whose investment is in the Western provinces.

Breed Societies Must Be Aggressive

But the adoption and expansion of the Shorthorn in these newer countries depends not alone on the usefulness of the breed, but upon the resourcefulness and the enterprise of the men whose interests are called with or centered in the Shorthorn breed. There must needs be a very considerable educational work undertaken. There must be very worthy representatives of the breed furnished in order that the standard may be kept up to the level of which the Shorthorn is capable. This may involve an occasional sale of breeding animals at prices that will be regarded quite moderate by the sellers. *It is constructive work and this is what will be needed for the best development of that wonderful area and the best interests of the wonderful breed which we represent.*

There is a tendency on the part of your Western people, partly because of the convenience, to invest in cattle bred in the States. Our herds are numerous, comparatively, and it is not so difficult to make up shipments of considerable numbers, so it is quite natural that your people, and let it not be forgotten that vast numbers of those in the Western provinces lived originally in the States, should come here to supply their needs. At present there exists a barrier in the form of the technical health and quarantine requirements which your Government has seen fit to place. This works a great inconvenience to your people who make purchases here and it very materially hampers the trade which would be beneficial to both interests concerned. The necessity of having federal inspection on every animal, the time involved in the quarantine, the expense involved in both become practically prohibitive. Information comes from Canadian sources that an effort is being made now to modify these terms. Certainly this should not be long delayed, for the trade is an important one, not so much for our people here, for we find an outlet for all we can produce, but in the interests of Canadian development. *The States have furnished buyers for many years to your enterprising and skilful breeders of Eastern Canada nor will we hesitate to continue this patronage.* Our restrictions are of a nature that enable shipments to be made readily from your country into the States. It is only fair that we should expect a similar plan to be put into effect so that reciprocal trade may proceed without hindrance or undue inconvenience.

Our Silos—fortresses of prosperity for both beef and dairy farming. While this article is written by the secretary of the American Shorthorn Breeders, his conclusions are wide enough for all breed interests.—Editor.

Good Faith Needed

We do not question the good faith of the Canadian breeders in the matter of maintaining healthy herds nor is there any reason that your authorities should assume that we are acting in any less good faith. Our state regulations offer sufficient protection and on this basis there need be no concern on the part of your people.

The American Shorthorn Breeders' Association as a stimulus to trade has offered to duplicate all prizes at Canadian shows on Shorthorns bred in the States, regardless of the ownership when exhibited. In talking with one of your foremost men of Alberta, I was assured that this was a most useful movement. It is having the effect of encouraging trade and it stimulates a rivalry which means improved standards. It creates an interest in show contests, it is good publicity for the breed and for livestock development.

There is no question but what the men in your country allied with livestock improvement have the brains, the energy and in most cases the means to make it the greatest industry within your borders, and in every step of your progress you will find that we of the States accord you full credit and all encouragement. There is no reason why the breeders of your country and those of the States shall not work in harmony and the examples set by the Shorthorn breeders in both countries will have a far-reaching influence toward encouraging mutual welfare.

There are great years immediately ahead in the line of livestock improvement.

Classify Our Vacant Acres

By W. D. ALBRIGHT

RECONSTRUCTION is such a familiar topic these days that it is in danger of becoming hackneyed. Let us consider a phase of constructive legislation which would fit in most opportunely with the reconstruction programme.

In the course of a recent drive along a five-mile stretch of road traversing a district so poor that early settlers had regarded it as hopeless for homesteading, and almost too poor for ranching, I noticed in the midst of it a good house and learned that every quarter section along that road had been recently filed upon by hopeful settlers, some of them returned soldiers, I understand. Some of the land is so inferior that it does not produce decent pasture. Even the willows look stunted. The whitish soil has a complexion of poverty. Some of it is pure sand, while much of the remainder is so rocky that when breaking it, one would need a blacksmith shop on the place, to sharpen plowlays, and a gang of navvies to dig and pick up rocks.

The fact which recommended these quarters is that they lie along a Town Line which has some chance of remaining a public highway. Allowing full advantage for this and also for the fact that late comers homesteading in the midst of settlement can afford to put up with land which it would be folly for those with first choice to select, it yet remains a problem how such land can be cleared and farmed at a profit in a big new country such as the Peace River region. If there are not cruel disappointments in store for those who attempt it, many experienced settlers will be surprised.

Some Land Best Left in Wood

Why should this be allowed? Why leave such quarters open for settlement? If the welfare of the individual were insufficient reason to provoke administrative action, surely the good of the country would supply justification enough. Surely the state is properly interested in the welfare of its citizens. Surely it wishes them to produce, and live where they can produce effectually, and live contentedly under conditions that will recommend the country to themselves and their friends! Surely we have enough good land for all.

Experience in both Europe and America demonstrates that land which is quite unfit for agriculture may be very profitably utilized for the production of timber, the preservation of game and for ranching. I believe it was a very wise policy of conservation which set aside the eastern slope of the Rockies and certain other areas as permanent forest reserves. The policy should be widely extended on a very elaborate scale which would reserve not only large tracts but local areas as well. The country should be fine-toothcombed with this end in view.

Every agricultural community needs fuel, poles and building material; and the closer to settlement the better. Even at this early stage in the settlement of Grande Prairie, fuel and fencing material are becoming scarce in many localities. In the more open parts of the Prairie there is little enough of either and farmers living there have for years back been hauling posts and rails and coal for distances of twenty miles or more. Local forest reserves, judiciously selected, widely distributed and wisely administered, would serve the needs of tens of thousands of people and contribute to thrift and economy in the truest sense.

Water Power Facilities

Incidental advantages would be the partial regulation of stream flow, the preservation of springs and the perpetuation of fur-bearing game and wild life generally, for which naturalists of the future would hold us blessed and which would contribute a not inconsiderable item of national income.

There would seem to be specially urgent need for prompt action to the end that soldier-settlers—who surely deserve the best the country can do for them—may be spared the tragedy of wasting the balance of their lives on unproductive land. What the country is now taking steps to do in the way of expropriating unused lands and disposing of them to settlers is in every way commendable and meets the hearty approbation of all with whom I have talked. Why not be equally solicitous of the interests of those who take up Crown Lands?

Classifying Lands Would Pay

What is to prevent a measure giving immediate effect to a broad, far-reaching plan of national conservation and thrift, under which all wild lands would be

> Considerable discussion has already taken place in the press of Canada regarding the proposed plans of commandeering unoccupied lands for soldier settlements. Had the proposals outlined here been in force, much of our land troubles would never have happened. The older East is inefficient because of wasted efforts by settlers in many parts.—Editor.

classified according to their adaptability and those unsuitable for successful agriculture withdrawn from settlement? Even occasional good quarters distributed among poor ones might well be withdrawn for the time being. Agricultural progress must be by communities and a good piece of land in the midst of an undesirable tract is not a fit place for any Canadian citizen to live and labor. Compactness of settlement, with a special view to school facilities and general neighborhood convenience, should be studiously planned. We have heard much of systematic town-planning. What about some timely country planning?

Lands of doubtful value for farming purposes might be reserved until such time as development clearly justified their opening to settlement. Err on the safe side.

Our Crown Lands would fall naturally into (a) farm land; (b) ranching land; (c) timber, park and mineral reserves. The latter areas should be thoroughly protected by game wardens and fire rangers, police combining these functions. On the forest areas a far more efficient and strongly manned system of fire ranging should be instituted than we have ever yet known. It would be folly to preserve forests for fire to consume. Right within hauling distance where this article is written, great quantities of jack pine fence posts and rails of much use to settlers are annually consumed by wildfire and little is done to prevent it.

Administering It Easy

To administer such a measure as outlined would call for some new officials, though the Mounted Police and the homestead inspectors might possibly fit in the machinery. While the Department of the Interior is in possession of considerable detailed information through the reports of land surveyors, this is not in all cases sufficiently minute to go upon. It would be useful, however, to those who might be entrusted with the responsibility of classifying the public domain.

Of late years in various parts of America soil surveys of settled districts have been made by agricultural experts. Whatever advantages may follow from these, it is obvious that vastly more good would accrue from surveys of unoccupied lands with a view to the wise control of settlement.

It is to be hoped that our returning legions, with the object lessons of centuries of European conservation fresh in their minds, will give force and impetus to legislation capable of vast and far-reaching benefits, if applied promptly at this juncture, in the domain of this nascent and resourceful young nation. May action be taken at once.

Organize Country *for* Epidemics

By ALONZO BROWN

THE ravages made by the Spanish Influenza remind Canadians of the importance of thorough organization of country districts for protection against epidemics and for relief of individuals and families who fall victims to any disease of such a character.

For one thing, the school teachers should be thoroughly informed of the nature of the disease, and be required, in case of an epidemic, to drill the children in regard to the symptoms of the trouble, and in what to do till the doctor comes. Along with this familiarity with the symptoms of the disease, should go the power of keeping the child out of school till authorized to return to school by the Medical Officer of Health.

The clergy, too, should be compulsorily enlisted in this work and be required, should an outbreak threaten, to state symptoms and first aid treatment, as in the case of the school teachers.

Further, the doctors should be given special training in communicable diseases and be compelled under penalty to give due notice of all cases coming under their observation. One hesitates to say it, but the facts warrant the statement that many doctors are not alert to the advent of many of the communicable diseases. Their diagnosis is at best in many cases the merest guesswork and based on the most perfunctory observation of the patient. It is easy for a doctor to make a mistake, all of us are aware, but doctors are not paid or trained or given special privileges in order that they may be protected in making mistakes soon to be covered six feet under ground. The Government cannot be too careful to see to it that all doctors are ready to combat communicable diseases particularly in the first case coming under their observation.

Parents, too, should be familiarized with the symptoms of diseases likely to become epidemic and trained to apply to the Provincial Board of Health for all the aid available. There is a tendency when a communicable disease breaks out in a community to diagnose all diseases in any way resembling that disease as of that variety. For instance, anyone who has a cold this winter is said to have had the influenza. When the doctor diagnoses any disease as of the communicable variety, the Provincial Laboratory should be consulted in order that the diagnosis may be confirmed. Parents will do well to insist on this.

Further, the Provincial Board should be very much on its right of way. Every facility should be provided for laboratory service. No doctor should be allowed to feel himself alone in this regard. If he is in the least puzzled about the handling of any communicable disease he should feel it a part of his duty to call in a man from the department who will see that everything known to medical science is done for the patient. In other words, there should be direct path open from the cottage of the poorest man who lives in the country to the best medical science the province affords. The city man has this privilege through the hospitals; why should the privileges be denied a man or a woman who lives in the country? When Lloyd George was a child he could not command the best medical attention; but who will say that it would not have been money well spent to have thrown around his cradle the best medical skill Britain could provide? And yet the fact remains that thousands of mothers are now sleeping their last sleep because the help they needed was not forthcoming and our graveyards are fattened by the little bodies of children who would have been spared had the Government done its manifest duty by them.

Further, Women's Institutes should be enlisted in this good work and a series of lectures given their meetings that will make the women of our land ready to meet an epidemic with the skill that means conquest. The first cases of a communicable disease are the crucial cases, for once such a disease establishes itself, there is little hope of its being stayed till it has taken its full toll.

Some of the officers of the Inter-provincial Council of Farm Women whose convention was held in Brandon, January 8 and 9.

Top row—Left to right: Miss Mary P. McCallum, Associate Editor of the Grain Growers' Guide; Mrs. J. S. Wood, President of the Manitoba Grain Growers; Mrs. J. F. Ross, Vice-President of the United Farm Women of Alberta.

Bottom row: Mrs. John McNaughton, Hon. Secretary of the Women Grain Growers of Sask.; Mrs. Geo. Brodie, President of the United Farm Women of Ontario.

TASSELLED LEGIONS *of* KING CORN

By Stanley T. Arthur

An Ontario growth of silo corn.

CORN, food for man and beast, the noblest and most versatile of farm crops, has not, it must be confessed, the vogue in Canada that it has in the country to the south of us—where it is native. It is particularly a North American crop—and essentially an American one—without the "north."

The past decade, however, has seen King Corn with his tasselled legions invade Canada in a surprising way, and like Canada's peace-time army it may be said to have more kernels than anything else—if you get what I mean.

Sentry boxes of the corn army have sprung up on thousands of Ontario farms and are even scattering their way over the prairies—silos, the profitable accompaniment of the corn crop. *Wherever one sees a silo, there he finds cattle, and a farm where fertility is being conserved.*

The final inclusion of corn in the farming program of Canada has not yet been fully achieved. The silo is not yet as numerous as it should be, and will be; our corn varieties have not yet reached their apex of development and acclimatization; and our seed corn industry has not yet been brought to the point where it begins to meet the demand even in a normal year.

This is the threefold feature of Corn in Canada; and there appears to be no reason why development along these lines should not move with rapid pace, whether it is destined or not to achieve the relative importance that it enjoys in the American corn belt. Were one to prophesy, it would be to the effect that corn can never be a SURE and outstanding crop in Canada with our capricious and rigorous seasons—but this world has been proving a poor place for prophecy, and it is just as well to preserve a discreet silence on this point.

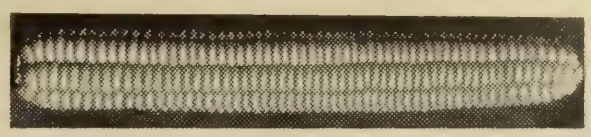
A Big Pile of Corn

In 1918 the United States produced well on to 2,750,000,000 bushels of shelled corn, which is just short of reaching the 5-year average, and in the year ending June 30, 1918 (a bad year), exported 41,000,000 bushels to feed the people and livestock of other countries.

Even Ontario, the banner corn Province of the Dominion, imports heavily both seed and feed corn from her neighbor to the South.

For the most part, the future of corn in Canada is bound up in the silo. Outside of a small section of Ontario, Quebec, and an insignificant area in British Columbia, seed or grain production is neither sure nor profitable—and most of the work done has been along the line of corn for ensilage.

Fodder corn is grown more or less in every Province of the Dominion, though Ontario leads, with Quebec a rather poor second, and last year saw an increase of well on to 50,000 acres in the crop in Canada. In 1918 Ontario increased her acreage of fodder corn, as also did Quebec in a smaller way, but an important and significant fact is that Alberta showed a phenomenal increase, and Manitoba a fairly satisfactory one. Saskatchewan, on the other hand, fell off 4,500 acres. Following figures show the acreage of fodder corn for the two years:



	1917	1918
All Canada	366,518	515,379
Ontario	265,000	380,000
Quebec	69,030	86,358
Saskatchewan	15,658	11,186
Alberta	3,976	14,010
Manitoba	9,800	12,340
British Columbia	2,239	2,016
Prince Edward Island	250	420
Nova Scotia	480	4,644
New Brunswick	85	3,459

Thus, Alberta stands as the heaviest corn grower of the Prairie Provinces, while most other Provinces also show healthy increases in this valuable crop. In his latest report, Hon. Duncan Marshall, Minister of Agriculture for Alberta, states: "Silos are now past the experimental stage in this Province, and are a success. In the southern part of the Province, where corn will reach the dough stage, good ensilage can be made from this plant."

Wild Indian Corn. All corn has been developed from this species, showing how man can mould Nature to his likes.

Prairie Corn Growing

Further reports tell of experimental work done in that Province, where at Athabasca, for instance, an acre of corn is planted every year for experimental purposes, and in 1917 was badly frozen, amounting to very little. At Medicine Hat it was also practically a complete failure from drought. At Claresholm a heavy crop was raised in 1917. At Sedgewick the year before the crop had been caught with a heavy frost, but it was put into the silo with some green feed, and made fair ensilage. At Stony Plain in 1916 a good crop of corn was also grown, but was frozen early in the season. Here, too, the silo was filled with corn, and oats in the milk stage, making good silage.

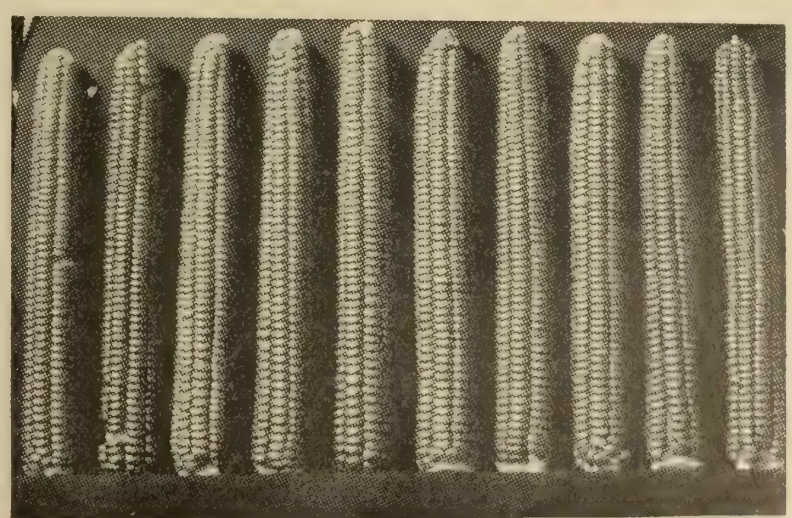
Throughout the Province of Alberta a surprising number of silos have been erected, being generally made of British Columbia fir on concrete base. Staves 2 x 6, tongued and grooved, are generally used, and give good satisfaction.

On G. S. Hollingsworth's farm, Quebec.

"Corn is becoming more extensively grown in Alberta every year," says Hon. Mr. Marshall, "and in the Southern and Eastern parts of the Province, good crops of fodder can be grown in years of average sunshine and rainfall, but the results so far indicate that it is not advisable to grow it as a main crop on especially prepared soil, but rather that its place in the rotation should be on land intended for summer fallow. In other words, part of the fallow may be used for this crop. The same amount of labor that is necessary to cultivate a good summer fallow, expended on the corn crop, will in most years give a good crop of corn fodder, besides leaving the soil in nearly as good condition for the next crop as regards moisture and freedom from weeds.

Northern Ripened Corn Best Seed

"Seed that has ripened in the Northwest has proved hardier than that brought in from warmer sections, and certain varieties have shown a decided tendency to mature earlier than others. The Northwest Dent is perhaps the most satisfactory of any variety that has been tried so far, both as regards hardiness and early maturing qualities. New varieties are being tried every year and it is possible that a still better variety may be found. The crop can be put in large shocks in the field and fed as dry fodder throughout the winter, or, what is more satisfactory, it can be put into the silo and with a crop not mature the quality of ensilage can be greatly improved by mixing with the corn, green oats, peas and oats, or alfalfa. The ensilage from the mixed fodders will not be nearly so acid or sour as when the green immature corn is used alone."



The first prize Longfellow at the Corn Show, Chatham, last year. The Corn Show this year promises to be a bumper.

Shelled Corn From Ontario

Two distinct methods of turning the corn into money are employed in Ontario. On the one hand, every township has its quota of silos in which the crop is "pickled" in its own juices and comes out a fragrant, succulent, appetite-teasing silage. Each silo has a five-to-ten-or-fifteen acre patch of whispering, tasselled corn every year.

On the other hand, down in the southwestern corner of the Province, and in a small way elsewhere, larger patches, and even hundreds of acres, are devoted to the same crop—for grain purposes. The corn ripens, and the ears are husked and saved in the airy corn cribs of open woodwork. This corn is fed on the cob to the stock, and the stalks are frequently hogged down or cleaned up by the stock running loose in the fields, or used as stover.

This grain production requires a favorable climate and a quick-maturing strain of seed. Ontario is better favored in this way than any other Province of the Dominion, and this year Quebec has dropped farther be-

hind. It is quite generally believed that Ontario's corn industry is capable of wider expansion, and to bring this point about P. L. Fancher was appointed to lead in the work. Ensilage production will increase naturally, but the grain expansion is met with many difficulties.

Last year a new and unknown element was encountered—British Columbia had 325 acres of "corn for husking," which yielded 32½ bushels to the acre, where Ontario's estimate (considerably below the average) was only 29 bushels. Whether British Columbia can produce shelled corn in any considerable quantities is a matter very much open to debate.

The acreage of corn for husking in Canada last year and 1917 was as follows:

	1917	1918
Ontario....	160,000	195,310
Quebec	74,339	54,690
British Columbia..	———	325

Ontario's production of shelled corn has not increased under war conditions. In 1913 there were 260,000 acres devoted to this crop, while in 1918 there were only 195,000, but the production makes a still poorer comparison of 16,182,000 bushels and 5,664,000 respectively.

Who will account for the decline of 33.2 bushels per acre in the yield of five years? Members of the Ontario Corn Growers Association have been breeding and selecting strains of corn to produce heavier yields, earlier maturity, and uniform production—and still the acreage and yield per acre decline.

The seasons have been largely responsible. Adverse weather conditions have tended to make corn less profitable, and so the crop has shrunk in size. The production of seed corn for the rest of Ontario was also hit hard. Last year's adversity, however, taught the necessity for protecting the seed corn from heavy frosts until it is thoroughly dried out after husking—and the lesson will not be soon forgotten.

Opinions vary as to the work actually accomplished by the O. C. G. A. in the decade or so of its existence. One claim for it, made by R. W. Knister, honorary president, is that it has increased the yield of corn per acre by plant breeding and seed plot selection—the advantages of which are not so apparent when adverse weather conditions curtail the production.

On the other hand, Angus McKenny, organizer of the association, regards the extension of the number of seed corn growers and the introduction of Wisconsin No. 7 and Golden Glow into Ontario (by the Walkerside Farm) and their adaption to Ontario conditions as among the important works of the association. Bailey and White Cap have also been improved through the association. "It has led to the production of more and better corn under Ontario conditions," says Mr. McKenny.

To the writer it appears as though, while corn silage can be profitably produced almost anywhere in Ontario, shelled corn will never be grown here as cheaply as it can across the line where the weather is more favorable than in this country, and where the implements of production cost a great deal less.

If this view be correct (and who will prove it otherwise) the great mission of Ontario's—and Canada's—private "Corn Belt," would appear to be the production of seed for a quick-maturing, heavy yielding ensilage corn for the rest of Canada. This seed corn to be sold on the ear and shipped on a straight quality basis to all parts of the country—or shelled and sold through a buyers' co-operative scheme.

What is needed not only in Western Canada, but in Ontario itself, and Quebec, is an early maturing corn that will give a good tonnage of ensilage per acre and not be caught by the early frosts.

Nothing has been said of corn for human consumption; luscious, juicy-kernelled ears that appear steaming from the pot or cold corn from the lacerated can of the canning factory tin—the corn that figures so charmingly at the fall "corn roasts," where it is invariably boiled, over a fantasy of darting, flickering flames and wrapped in smoke wreathes that swirl like witch's veils. That is another story, one that forms no inconsiderable chapter in many sections of Ontario adjacent to canning factories and large market centres—but still comparatively small, taking the Province as a whole.

European OUTLOOK *for* LIVESTOCK

From an Address Delivered at the Experimental Union

By PROF. WADE TOOLE

WE are told that food was the final factor which brought the Central Powers to their knees. So will it be food that will be one of the main factors through the period of reconstruction on the threshold of which we stand at the present moment. Harmony, contentment, progress can never prevail where food is scarce. To make food reasonably plentiful great efforts are necessary in field, feed-lot and stable, and the livestock breeder must "carry on."

When we look the matter squarely in the face there seems to be little danger in prophesying good times ahead for the breeder of high-class livestock. No one can say what prices will be. They may be lower, but in comparison with prices which will likely prevail for other farm products there is every reason to believe that the market for livestock and livestock products will be good. This is no time to be planning to go out of the livestock business. True, prices have been abnormally high and an easing off must come some time, but there is little likelihood of the market going back to some of the low levels of years before the war and, comparatively speaking, the livestock business should be a good business for Ontario for all time.

If one stops to study the history of any branch of farming, or of any line of business, it will be found that invariably periods of high prices are followed by similar periods of lower prices. Every business has its ups and downs but the successful man, no matter what his business, is the one who sticks to it over the hard places and thus reaps the greater reward in periods of high prices and keen demand. The man who is in livestock one year and out the next is generally the one who goes in too strongly on a high market and goes out quickly when prices drop, losing heavily on the transaction. If there ever was a time when Ontario breeders, yes, breeders in all parts of Canada and in all States of the Union to the south of us, should stay in the livestock game it is the present. The past few years have been, comparatively speaking, fairly prosperous years for the man with his farm well stocked with high-class animals. The immediate future promises continued prosperity for the breeder of good stock.

Let us look into the figures showing some of the decreases of livestock in Europe as compared with conditions just before the war—when, you will remember, prices were high compared with those of a decade previous to that time and there was a growing demand for good meat of all kinds.

France has 2,366,000 fewer cattle than in 1914; Italy, 996,000; Denmark, 345,000; Sweden, 599,000; Germany, 2,200,000; and Austria-Hungary, considerable. These figures alone show a decrease of 6,306,000 head of cattle and many countries which have suffered are not named.

The sheep decrease in France, Italy, Denmark, and Holland alone is over two and one-half millions, and in pigs there has been a wholesale decrease to the number of 24,952,000 in France, Italy, Denmark, Sweden, Holland and Germany. Denmark, Canada's strongest competitor on the British bacon market, is 1,873,000 short of a normal supply of pigs. Germany is 19,396,000 short of her 1914 hog population.

These figures should prove interesting to the Ontario livestock breeder. Reserves of food material in the world are very low. Stock with which to increase these reserves is not up to normal numerically. Indications are that a good demand must continue for the finished product of the farm.

We have room in Canada to do great things. At present we have only six head of cattle per hundred acres of land in farms. Holland has 29, Denmark 25 and Great Britain 16. More livestock would increase the fertility of our farms. We might just as well supply a larger percentage of Britain's beef needs. Out of over one billion and seventy-seven million pounds of beef annually imported by Great Britain Canada ships only a little over twenty-nine million pounds. Canadian stockmen should plan to supply a higher part of the British beef requirements through keeping more and better-bred beef cattle.

Canada has two dairy cattle per hundred acres of land in farms. Great Britain has 5, Holland has 16, and Denmark has 14. Dairy products of all kinds are and will be in good demand. Britain imports annually 452,795,264 pounds of butter. Canada supplies a little over six million pounds of this. There is room for expansion with dairy cattle in Canada. A growing home demand makes prices fairly high for milk and cream and the cheese demand from overseas is likely to be fairly good. The dairy cow will continue to pay her way in this country. All that is required is more of the heavy producing kind. The scrub must go and the 8,000 and 10,000-pound cow take her place. There is no money in the 3,000 and 4,000-pound producer. Better breeding and more careful testing should be followed.

Canada has only two sheep per hundred acres in farms. A great part of this country—and particularly is this true of Ontario—is well adapted for sheep breeding. The dog nuisance, a mistaken notion that sheep are hard to fence against, low prices for wool and lambs in the past, and other things have combined to turn the farmer against sheep. The higher prices of the past few years have increased the interest in sheep and Canada has at present a little over three million head as compared with two million in 1914. Our farms would carry millions more. Wool in 1912 was 14c per pound. In 1918 it was 68c. It can drop considerably and still be much higher than in pre-war times, and we are told on good authority that it will be six years before the world's supply of wool can become normal. The demand for lamb and mutton is almost sure to be good. People have been learning to appreciate lamb while saving other meats for overseas. The outlook for the breeder of good sheep and the producer of high quality wool never was better.

We have been considering chiefly livestock for the block. We have shown that the outlook is bright. It is even brighter for the breeder of pure-bred stock. Gradually people are beginning to appreciate the value of better breeding in their farm stock. While all classes of farm livestock in Canada have increased since 1914 (horses by nearly three-quarters of a million, milk cows by over 300,000, other cattle by several hundred thousand, pigs by nearly a million and sheep by practically a million) registrations of pure-breds have doubled and in some breeds increased five-fold as compared with those of the years before the war. Canada cannot get too many really top-notch pure-breds.

The greatest need of the present is more good pure-bred sires. Too many otherwise careful farmers are careless about the sires used in their herds and flocks. It should be remembered that a good sire is at least half the herd and a poor one is all of it.

By using the best varieties and mixtures of grains, roots, clovers and grasses, as recommended by the Experimental Department of this Institution, and thus producing an abundance of the cheapest feed possible to procure, and by judiciously feeding this to more and better livestock, the future of the Canadian, and particularly the Ontario farmer is assured. Canada exports $150,000,000 worth of animals and animal products annually. Let us all do our part to bring this figure up to the $500,000,000 mark which H. S. Arkell, Dominion Livestock Commissioner, says we should be exporting inside of five years. This accomplished, we will be doing our part to ensure the financial safety of the country we all love so much and at the same time the individual farmer will be reaping a steady reward from his livestock. Breed more stock. Breed better stock. Kill the scrubs. Stay in the business.

CATTLE *on the* BLUE GRASS HILLS

Herefords are an eye-satisfying picture on blue grass.

By A. P. MARSHALL

IN the rolling hills north of Wheeling, the 700 acres composing Waddington Farms, with its wonderful hills and valleys, present, we believe, the most beautiful piece of farm scenery we have ever had the fortune to see. Truly a wonderful spot to carry out a plan that must surely give the very greatest of satisfaction as well as enable its owner to realize the ambition of producing stock and inspiration that will leave its mark of improvement throughout the state for generations to come. Livestock farmers of North America have their lines laid in pleasant places.

Waddington is not a show place. The purpose is to get practical results and know just how they are secured. The chart of the farm in the manager's office, showing the entire layout of the farm with every detail distinctly marked thereon, and the careful records making it possible to know exactly the definite results in each department, are a revelation to anyone who can think that such things on a farm have no place or are of little or no use.

If one wants to know why the luxurious alfalfa growth in one field is so much heavier than another, the records will show exactly why and the results in building the soil are conclusive and beyond question for the benefit of any who will profit by them. The farm does not confine its knowledge to its own use but Institute meetings are urged and encouraged, resulting in a much greater interest in learning to intelligently master the problems as they exist for each individual farmer.

The Bulls Are Loaned

Bulls are loaned to State Institutions and aid with various plans to encourage the farmer to improve his stock by grading up has worked wonders in some communities for those either unable or unwilling to obtain stock improvements for themselves.

Many a boy in West Virginia owes considerable to the goodness of Howard Gore, county agent, Clarksburg, who, it is said, would think nothing of going 50 miles to help him make a proper selection of a bull to improve his stock. The value of such service, given entirely with a view to help, has a lasting, beneficial effect in the community.

As an example of furnishing real help to the worthy boy it is simply necessary to cite the case of the annual prize of a Guernsey bull calf which goes to the boy winning the corn judging contest. This is practical aid, encouraging introduction of the finished dairy blood.

On account of the rugged hills in West Virginia, dairy cattle are rarely found except adjacent to the cities. The natural lime deposit produces a blue grass which seems to fatten cattle readily, and this is naturally the easiest solution for use of the rough land and the hillsides. Consequently fat cattle and sheep have been the mainstay for a good many of the farmers. To change and improve the variety of effort takes a great deal of hard work and definite evidences of success.

In West Virginia Herefords predominate but grades of Hereford-Durham and Hereford-Durham-Angus are gaining in favor and seem to produce easiest the best carcases for market. Buyers select from the farmers likely stock 3 to 4 years of age, simply ranging them on blue grass in summer and feeding hay and roughage in winter. This puts a finish on them equal to grain fed beef. They are shipped in August, September and October for Eastern markets.

The peculiar soil conditions here also have a most beneficial effect on the texture of the wool of the sheep grazing on these hills. Several times national championships for quality of wool have gone to West Virginia sheep, supposedly due to lime conditions in the soil. Champion wool at Paris and St. Louis was West Virginia grown.

Howard Gore, who grazes cattle and sheep on about 600 acres and ships highest type of fat stock, allows about 4 acres to each animal, insuring rich abundance of blue grass at all times.

A Dairy Herd

A herd of 74 Guernseys plays an immense part in building up the soil, for although considerable rock phosphate is used for fertilizing purposes the animals on the farm supply the most valuable bulk of this necessary soil-building element, which makes its value so evident when the crops are taken off.

One does not have to be an expert to tell the difference between land lacking in nutrient parts proper for the crops grown on it and that which has the necessary elements for producing the crop best if the results can be seen in the standing crop. By close observation and record it is possible, however, to definitely learn what difference the uses of various soil builders will make in the crops. Correct soil analysis enables the farmer to put just what is needed into his land, but there seems to be nothing that brings such generally good results under most conditions as stable manure. Examples of this can be observed no matter where you go.

A Sun Parlor For Calves

A calf sun parlor (30 by 60), with partial glass roof in one portion, made a splendid exercising plan for young calves in bad wintry weather. It seemed to be a wonderful boon to these young animals, enabling them to gambol about under bright, clean surroundings at practically any season of the year.

The record of every cow is known, complete tests being made at two and five years. Although no showing is practised some of the animals could certainly push prominent winners for top places. A great many that are sold go South and readily bring up to five hundred dollars in ordinary sale.

Conditions in Canada Ideal

When we see the difficulties overcome in some of these hill states the natural conclusion must be that many farmers are indeed fortunate in having conditions as favorable as they are. Our own fair Canada seems to furnish conditions equal to any for the carrying on of any class of agricultural production. We have frequently heard farmers speak something like this: "I wonder how they ever manage to plough and cultivate that hillside to get a crop on it." Surely to see results in some of these places must make a farmer more favorably placed, realize his advantages and go to it with the renewed satisfaction that intelligent toil will bring him the success he hopes for. 1919, with the return of so many men, should make it possible for the farmer to handle his acreage and his burdens should begin to ease up even with the spring work.

Prices are not going to slump so suddenly as to dislocate farming, while the future holds much encouragement along many lines. The wide-awake man knows how to figure.

A herd of Guernseys at pasture on the Waddington Farms in Virginia.

WILDFIRE

A Tale of Wild Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars"

CHAPTER V. *Continued*

IT was the horse-hunter's passion that reminded him of his pursuit. The deer trail led down through a break in the wall. Only a few rods of it could be seen. This trail was passable, even though choked with snow. But the depth beyond this wall seemed to fascinate Slone and hold him back, used as he was to desert trails. Then the clean mark of Wildfire's hoof brought back the old thrill.

"This place fits you, Wildfire," muttered Slone, dismounting.

He started down, leading Nagger. The mustang followed. Slone kept to the wall side of the trail, fearing the horses might slip. The snow held firmly at first and Slone had no trouble. The gap in the rim-rock widened to a slope thickly grown over with cedars and pinons and manzanita. This growth made the descent more laborious, yet afforded means at least for Slone to go down with less danger. There was no stopping. Once started, the horses had to keep on. Slone saw the impossibility of ever climbing out while that snow was there. The trail zigzagged down and down. Very soon the yellow wall hung tremendously over him, straight up. The snow became thinner and softer. The horses began to slip. They slid on their haunches. Fortunately the slope grew less steep, and Slone could see below where it reached out to comparatively level ground. Still, a mishap might yet occur. Slone kept close to Nagger as possible, helping him whenever he could do it. The mustang slipped, rolled over, and then slipped past Slone, went down the slope to bring up in a cedar. Slone worked down to him and extricated him. Then the huge Nagger began to slide. Snow and loose rock slid with him, and so did Slone. The little avalanche stopped of its own accord, and then Slone dragged Nagger on down and down, presently to come to the end of the steep descent. Slone looked up to see that he had made short work of a thousand-foot slope. Here cedars and pinons grew thickly enough to make a forest. The snow thinned out to patches, and then failed. But the going remained bad for a while as the horses sank deep in a soft red earth. This eventually grew more solid and finally dry. Slone worked out of the cedars to what appeared a grassy plateau inclosed by the great green-and-white slope with its yellow wall overhanging, and distant mesas and cliffs. Here his view was restricted. He was down on the first bench of the great canon. And there was the deer trail, a well-worn path keeping to the edge of the slope. Slone came to a deep cut in the earth, and the trail headed it, where it began at the last descent of the slope. It was the source of a canon. He could look down to see the bare, worn rock, and a hundred yards from where he stood the earth was washed from its rims and it began to show depth and something of that ragged outline which told of violence of flood. The trail headed many canons like this, all running down across this bench, disappearing, dropping invisibly. The trail swung to the left under the great slope, and then presently it climbed to a higher bench. Here were brush and grass and huge patches of sage, so pungent that it stung Slone's nostrils. Then he went down again, this time to come to a clear brook lined by willows. Here the horses drank long and Slone refreshed himself. The sun had grown hot. There was fragrance of flowers he could not see and a low murmur of a waterfall that was likewise invisible. For most of the time his view was shut off, but occasionally he reached a point where through some break he saw towers gleaming red in the sun. A strange place, a place of silence, and smoky veils in the distance. Time passed swiftly. Toward the waning of the afternoon he began to climb to what appeared to be a saddle of land, connecting the canon wall on the left with a great plateau, gold-rimmed and pine-fringed, rising more and more in his way as he advanced. At sunset Slone was more shut in than for several hours. He could tell the time was sunset by the golden light on the cliff wall again overhanging him. The slope was gradual up to this pass to the saddle, and upon coming to a spring, and the first pine-trees, he decided to halt for camp. The mustang was almost exhausted.

Thereupon he hobbled the horses in the luxuriant grass round the spring, and then unrolled his pack. Once as dusk came stealing down, while he was eating his meal, Nagger whistled in fright. Slone saw a gray, pantherish form gliding away into the shadows. He took a quick shot at it, but missed.

"It's a lion country, all right," he said. And then he set about building a big fire on the other side of the grassy plot, so as to have the horses between fires. He cut all the venison into thin strips, and spent an hour roasting them. Then he lay down to rest, and he said: "Wonder where Wildfire is to-night? Am I closer to him? Where's he headin' for?"

THE night was warm and still. It was black near the huge cliff, and overhead velvety blue, with stars of white fire. It seemed to him that he had become more thoughtful and observing of the aspects of his wild environment, and he felt a welcome consciousness of loneliness. Then sleep came to him and the night seemed short. In the gray dawn he arose refreshed.

The horses were restive. Nagger snorted a welcome. Evidently they had passed an uneasy night. Slone found lion tracks at the spring and in sandy places. Presently he was on his way up to the notch between the great wall and the plateau. A growth of thick scrub-oak made travel difficult. It had not appeared far up to that saddle, but it was far. There were straggling pine-trees and huge rocks that obstructed his gaze. But once up he saw that the saddle was only a narrow ridge, curved to slope up on both sides.

Straight before Slone and under him opened the canon, blazing and glorious along the peaks and ramparts, where the rising sun struck, misty and smoky and shadowy down in those mysterious depths.

It took an effort not to keep on gazing. But Slone turned to the grim business of his pursuit. The trail he saw leading down had been made by Indians. It was used probably once a year by them; and also by wild animals, and it was exceedingly steep and rough. Wildfire had paced to and fro along the narrow ridge of that saddle, making many tracks, before he had headed down again. Slone imagined that the great stallion had been daunted by the tremendous chasm, but had finally faced it, meaning to put this obstacle between him and his pursuers. It never occurred to Slone to attribute less intelligence to Wildfire than that. So, dismounting, Slone took Nagger's bridle and started down. The mustang with the pack was reluctant. He snorted and whistled and pawed the earth. But he would not be left alone, so he followed.

The trail led down under cedars that fringed a precipice. Slone was aware of this without looking. He attended only to the trail and to his horse. Only an Indian could have picked out that course, and it was cruel to put a horse to it. But Nagger was powerful, sure-footed, and he would go anywhere that Slone led him. Gradually Slone worked down and away from the bulging rim-wall. It was hard, rough work, and risky because it could not be accomplished slowly. Brush and rocks, loose shale and weathered slope, long, dusty inclines of yellow earth, and jumbles of stone—these made bad going for miles of slow, zigzag trail down out of the cedars. Then the trail entered what appeared to be a ravine.

That ravine became a canon. At its head it was a dry wash, full of gravel and rocks. It began to cut deep into the bowels of the earth. It shut out sight of the surrounding walls and peaks. Water appeared from under a cliff and, augmented by other springs, became a brook. Hot, dry, and barren at its beginning, this cleft became cool and shady and luxuriant with grass and flowers and amber moss with silver blossoms. The rocks had changed color from yellow to deep red. Four hours of turning and twisting, endlessly down and down, over boulders and banks and every conceivable roughness of earth and rock, finished the pack-mustang; and Slone mercifully left him in a long reach of canon where grass and water never failed. In this place Slone halted for the noon hour, letting Nagger have his fill of the rich grazing. Nagger's three days in grassy upland, despite the continuous travel by day, had improved him. He looked fat, and Slone had not yet caught the horse resting. Nagger was iron to endure. Here Slone left all the outfit except what was on his saddle, and the sack containing the few pounds of meat and supplies, and the two utensils. This sack he tied on the back of his saddle, and resumed his journey.

Presently he came to a place where Wildfire had doubled on his trail and had turned up a side canon. The climb out was hard on Slone, if not on Nagger. Once up, Slone found himself upon a wide, barren plateau of glaring red rock and clumps of greasewood and cactus. The plateau was miles wide, shut in by great walls and mesas of colored rock. The afternoon sun beat down fiercely. A blast of wind, as if from a furnace, swept across the plateau, and it was laden with red dust. Slone walked here, where he could have ridden. And he made several miles of up-and-down progress over this rough plateau. The great walls of the opposite side of the canon loomed appreciably closer. What, Slone wondered, was at the bottom of this rent in the earth? The great desert river was down there, of course, but he knew nothing of it. Would that turn back Wildfire? Slone thought grimly how he had always claimed Nagger to be part fish and part bird. Wildfire was not going to escape.

By and by only isolated mescale plants with long, yellow-plumed spears broke the bare monotony of the plateau. And Slone passed from red sand and gravel to a red, soft shale, and from that to hard, red rock. Here Wildfire's tracks were lost, the first time in seven weeks. But Slone had his direction down that plateau with the cleavage lines of canons to right and left. At times Slone found a vestige of the old Indian trail, and this made him doubly sure of being right. He did not need to have Wildfire's tracks. He let Nagger pick the way, and the horse made no mistake in finding the line of least resistance. But that grew harder and harder. This bare rock, like a file, would soon wear Wildfire's hoofs thin. And Slone rejoiced. Perhaps somewhere down in this awful chasm he and Nagger would have it out with the stallion. Slone began to look far ahead, beginning to believe that he might see Wildfire. Twice he had seen Wildfire, but only at a distance. Then he had resembled a running streak of fire, whence his name, which Slone had given him.

This bare region of rock began to be cut up into gullies. It was necessary to head them or to climb in and out. Miles of travel really meant little progress straight ahead. But Slone kept on. He was hot and Nagger was hot, and that made hard work easier. Sometimes on the wind came a low thunder. Was it a storm or an avalanche slipping or falling water? He could not tell. The sound was significant and haunting.

OF one thing he was sure—that he could not have found his back-trail. But he divined he was never to retrace his steps on this journey. The stretch of broken plateau before him grew wilder and bolder of outline, darker in color, weirder in aspect, and progress

Continued on page 39

SYNOPSIS

THE story opens at Bostil's Ford, in the wild country of the Colorado River. Bostil is a rancher whose affections are divided between his horses and his eighteen-year-old daughter Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen.

The story is at present concerned with the adventures of Lin Slone, a daring wild-horse hunter, far away in the uplands of Utah. For the past six weeks, in the company of two others, he has been trailing a magnificent wild stallion, which he has named Wildfire. Supplies are giving out and the two others have now abandoned the quest, leaving Lin to go on alone. Wildfire's tracks lead on into new and unfamiliar country, and on the third morning Lin realizes that he has reached the Grand Canon of the Colorado. He is greatly moved by the strange beauty of the scene.

A HOUSE THAT GROWS *into a* HOMESTEAD

By ETHEL M. CHAPMAN

THE fascinating thing about building a house in the country is that the architect has unlimited scope for creating something after his own ideals. He is not hampered or influenced by neighboring buildings crowding up close enough to cramp his plan into a narrow frontage, to shut out the light from side windows, to clash with the style he has designed or to spoil the setting by breaking the restful background of fields and trees and sky. It is to the country we should look for our charming, artistic, individual homes. The builder who accepts the conventional countryside model which forces houses into stiff, uninteresting primness shows a sorry lack of imagination. The farm house should be something which can be pictured as growing into a homestead, creating lifelong memories.

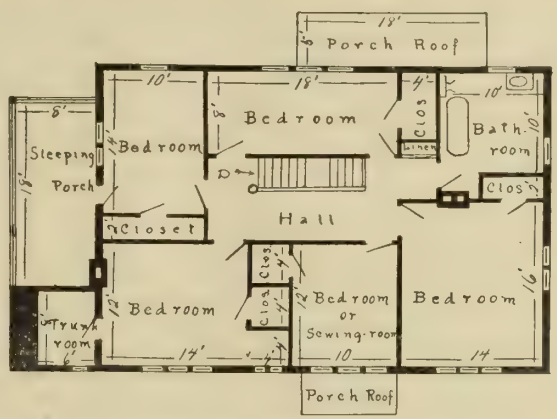
The house shown here is ideally fitted for the country. Its broad front was not designed for a narrow city lot. Set on a wide lawn looking to the highway it has an air of spaciousness and cheerfulness and hospitality that every real farm home deserves. It could scarcely be called less dignified than the colonial house though the side porch with the bungalow roof and the broken roof-lines across the front give it a rather rambling and less formal appearance. These irregularities, however, because they are free from any effort at display, have a restfulness that is usually lacking in the very severe colonial type. The combination of brick and stucco not only gives a brighter tone to the house, but the horizontal line where the brick and stucco meet adds to the effect of breadth. Frame-weatherboarding or shingles might be used instead of the stucco with the brick, or a very handsome house could be made by using cobblestones for the lower half with buff brick above. The sheltered side porch, the deep bay windows and the grouping of all the windows across the front, give an impression of comfort and livableness entirely lacking in the conventional model with straight sides, stiff, narrow front-porch and stinted window space.

AS would be expected from the exterior, the rooms inside are planned to give the most cheerful, comfortable living conditions, and arranged in convenient relation to each other. The front door opens into the usual hall, but instead of running this back to the kitchen it is cut off square, leaving space for a pantry cornering off both kitchen and dining-room. The front stairway going up from this hall is easily accessible to the living-room and dining-room or the front rooms of the house. A back stairs runs up from the kitchen, meeting the front stairs at a landing half-way up where the front stairs turns and only one stairway is needed for the rest of the way. We would have ample room on the first floor for two complete stairways, but this arrangement saves the extra half-space that would be required on the second floor if two separate stairways had to be provided for. The closet off the hall and the hall seat with box underneath will be found a great convenience in taking care of coats, rubbers and outdoor clothes other than the every-day things which can be hung in the washroom off the kitchen.

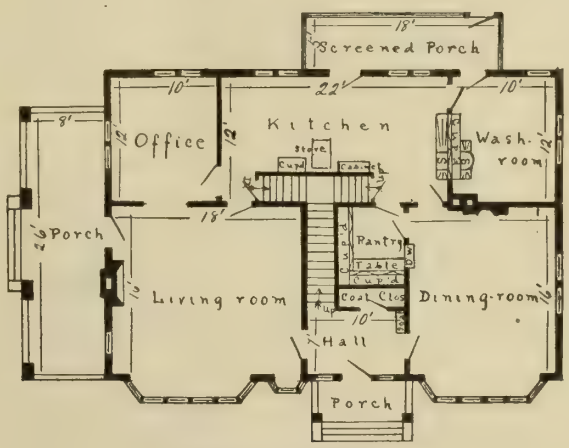
The living-room at the left of the hall is a large and particularly pleasant room with a fireplace and abundant window space. The fireplace is one of the things the farm home cannot afford to be without—an open fire will do more to bring people close together and to hold them together than any other material influence known. A seat might have been built in the alcove of the wide bay window across the front, but that can easily be put in if the family desire it. A great many would rather have this sunny spot reserved for growing plants, a work-table or a comfortable couch where one can drop down for a few minutes' rest. The position of this room with relation to other rooms makes it ideally fitted for a *living* room, a room that the whole family will use every day. It opens directly to the kitchen though the little jog in the kitchen wall around the stairway seems to separate it somewhat from the busiest scene of kitchen work. It has wide sliding doors, opening to the office so the two rooms can be thrown practically into one, and as it leads to the wide side porch where the family will gather every evening in summer, it will never be a room to keep closed. The office, too, being set so comfortably close to the kitchen will soon become a very usable place to even the man who finds the kitchen the most agreeable sitting-room in the house.

AS there is more housework to be done in a farm-house than in any other house the kitchen and its closely related rooms should have special attention. One common defect in farm kitchens is that they are too big—the different "working-stations" are so spread out that the housekeeper has to do a tremendous amount of unnecessary traveling in doing the work. The kitchen here is long, but the stove, sink and cupboards are close together. The other end of the kitchen could have a rocking chair or even the sewing machine or it would make a good corner for a baby when it couldn't be outdoors. When there is a baby in the family, however, it is well worth while to screen in the back porch so it can have a safe, fresh-air day nursery, protected from flies and mosquitoes and not too far from its mother. Having the porch screened from flies also makes it a most comfortable, warm weather dining-room, or a place where work like filling jars for cold pack canning can be done away from the heat of the kitchen stove. The wash-room which is not only a place for the men to wash up but a laundry room as well relieves the kitchen of a lot of the dirtier work. The position of the chimney with its double flue provides for a stove being set up in this room and jobs like trying out lard, boiling clothes, or canning in hot weather can be done here. The outside door saves unnecessary traveling through the kitchen. Having the sinks in the two rooms directly opposite each other against the same wall gives a direct plumbing system. The wide four-foot drainboard at the left of the sink in the kitchen with a cupboard for dishes directly above does away with all unnecessary work in dishwashing. There should be no cupboard or closed in place under the sink; it is hard to reach into and hard to keep clean; in this kitchen we have a cupboard beside the stove about five feet high, with shelves and hooks for pots and pans and all kinds of cooking utensils.

The farm house should be something which can be pictured as growing into a homestead, creating life-long memories.



Layout of rooms upstairs.



Layout of rooms downstairs.

The position of the pantry makes it particularly convenient. It opens to both kitchen and dining-room without coming between to make extra traveling in going from one of these rooms to the other. The pantry is not intended at all for a work-room—the kitchen cabinet in the kitchen close to both the stove and the sink provides all the accommodation necessary for baking; the pantry in this case is merely a place with deep, ample cupboards for keeping supplies and opening as it does into two well-lighted rooms it does not need a window. A dumb-waiter is put in so that it can be opened from either the pantry or the dining-room.

The dining-room is practically the same as the living-room, lacking the little group of high casement windows, and four feet of width. A fireplace has been put in this room too; it is not so important here perhaps as in the living-room where the family spend the evenings, but will be found a great comfort on chilly days in the fall and spring when there is no fire in the furnace. A window-seat might be built in the alcove here with a box underneath to hold the extra boards from the extension table; however, it is not difficult to find a place for these and the family might prefer to keep the alcove open for house plants, a dinner wagon, or extra chairs. The ample window space on two sides of the room should provide for letting the sun in at almost any hour of the day.

UPSTAIRS the bedrooms are all a good size, well-lighted and airy and each provided with a clothes closet. While all the partition walls do not run directly above the walls of the rooms below, each room has one wall continued up from the floor below to provide for connecting a register or radiator with the furnace in the basement. On the same principle the bathroom is placed over the washroom to give a simple, direct system of plumbing. Off the bedroom at the front left-hand corner, where the roof comes down over the porch, is a little "trunk room," especially convenient for storing furs, blankets, etc. If it can be cedar-lined as a protection against moths, so much the better. Another feature which should not be omitted in the modern farm house is the sleeping porch. Apart from the comfort this provides on hot nights, there may be a time when outdoor sleeping is almost necessary for a delicate member of the family; then a sheltered porch like we have here will be one of the most important rooms of the house.

FARMERS' MAGAZINE

Canada's National Farm Magazine

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA

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THE REFERENCE NUMBER

NEXT issue of the FARMERS' MAGAZINE will be the annual Reference Number. It will carry a fund of useful information for the guidance of the farmer in his work during the coming spring and summer. Many expert writers are already contributors. Its usefulness covers the whole of Canada.

BANKS AND FARMERS

THE recently proposed Ottawa-Nova Scotia bank merger has revived the question of banking service to the farmers of Canada. The tendency of the financial institutions seems to lay toward centralization and big business. For already some of our Canadian banks are establishing branches outside Canada even on the opposite side of the world. This is due to the demands of commerce. We are reaching out into world trade. Such a banking move meets general approval.

In the matter of rural service, there is fear in some quarters that big financial amalgamations will tend to take rural capital to large centres to exploit the fortunes of millionaire corporations to the detriment of the rural interests. Another fear lies in the placing in a few hands great financial privileges that might at times be mischievous.

Whether these fears have any foundation for them remains to be seen. But public opinion will largely mould the situation, for the people have always the redress of public control if abuses do creep in.

A politician in south-western Ontario has appealed again from the stump for a drastic revision of the Dominion banking situation, alleging, as usual, serious disregard of rural interests. Just how far the instances of such banking indiscretions are put in as evidence, we have not learned. But there seems to be little disturbance over this question among the farmers. Farmers in all parts of the East have a branch bank near them and the policies of most of these banks have been to grant banking accommodations to farmers. The co-operative associations and farmers' clubs have been getting good arrangements as to credit. So that when farmers discuss the situation seriously they must come to the conclusion that the Canadian system is working out well to the good of agriculture, although isolated cases of indiscreet local managers to the contrary.

Just so long as agriculture is served by these banks so long will there be little agitation for a change. Rural capital should be used to develop rural enterprises and every facility without prejudice be given to localities to build up their own business prosperity.

LIVESTOCK PRICES

FARMERS have been much exercised over the sudden drop in hog prices and the uneasiness existing in the cattle market. Coarse grains are falling in price also, while hay seems to be going higher. It is a peculiar combination of circumstances and cannot be explained entirely.

Looking over the situation calmly, one must come to the conclusion that there can come no very startling price reductions throughout the year. Cattle, especially good heavy beeves, will remain on a high level for some time. The Senate of the United States in considering the $100,000,000 food bill, allowed a 10 per cent. increase in the year beginning next July. This would indicate a high cattle market for some time ahead.

In the matter of hogs, no one of course can predict what is going to happen but it is not likely that prices will go far below the present level for some time. Feeders with cheaper grain can afford to accept lower pork prices and still be ahead.

Farmers must be prepared for lower prices as the market will gradually go back to the normal. Wool apparently has taken a tumble although the woollen goods do not seem to reflect the reduction very much as yet.

A well-known authority says regarding the outlook: All over the world high prices for practically every commodity prevails. A readjustment will come, but it is not going to come like a thunderbolt from a clear sky. It is always well to conserve and to make provision for the future, but this is no time to cease feeding or breeding operations on the theory that financial disaster is going to overtake our farmers and feeders.

CLASSIFY FARM HANDS

EVERY farmer in older Canada knows some of the evils of poor soil. Time and again as one travels across the townships he is confronted with poor stretches of country which are worthless from almost every agricultural viewpoint. The depleted humus has revealed a sandy or rocky sub-soil that is good for nothing. Had such areas been kept to nature to reforest or had a better use been made of them, much of the poverty of the district would have been avoided.

That this evil is being perpetuated in our great West is inexcusable. The observations made by Mr. W. D. Albright of Peace River on page eight suggest a remedy that ought to engage the serious attention of the authorities at Ottawa.

COMMUNITY HOSPITALS FOR ONTARIO

IN the last issue of FARMERS' MAGAZINE, A. J. Macdonald told of the growth of municipal hospitals in Saskatchewan. The need is not alone for the prairie; it is something for which the rural districts of Ontario and the Eastern provinces have suffered as well. How poorly we were equipped to fight the epidemic of influenza this fall! Trained nurses for the country were out of the question; everyone was on a case in the city with a growing waiting list ahead of her. If we had had a hospital here and there in our own counties we would have had nurses on the job; we would have had a place where volunteer nurses from among our own girls and women could have taken a few lessons on the special treatment of this disease before going out to fight it in the homes of the community; and we would have been educated earlier to the extreme need of precautions.

Even in normal times the community hospital would be the most valuable service station in the neighborhood. School clinics following medical inspection in the rural schools have shown that many parents who were eager to bring their children to the clinics for treatment had put off taking them to the city hospitals on account of the dread of leaving them so far from home, or because they had not been able to get enough money ahead to meet the fees and expenses. Everyone knows too the tragedy of rapidly developing cases of appendicitis, or other trouble needing quick surgical attention being lost because of the time it took to get the patient to a hospital at the end of a several hours' railway journey. And there are other things. In one little Ontario town they have a most homelike hospital, one of the best equipped in Canada. The nurses in training are practically all girls from the district; it is an institution in which the whole community is interested, they feel that it is their own. Here is one individual case which shows just what it means. A woman well on in years, living with her only son, had a serious illness which will leave her an invalid for the rest of her life. The son was unmarried, his income was not large, it was impossible to get anyone in the house to give his mother the care she needed; to send her away from her old neighborhood to an institution would have broken her heart—and probably his. But she has a room in the hospital where she can look out and see her neighbors going up and down the streets, and her son comes in to see her every night. It's almost like being at home.

Undoubtedly the community hospital comes among the first of the better health needs in our reconstruction programme. Peel County, with the help of Women's Institutes, has some definite plans under way; there is little doubt that, if given the provincial support it deserves, the movement would spread widely.

EDITORIAL NOTES

MUNICIPAL Hospitals must come.

STAND pat on your farm organization.

BE CONFIDENT of your own business.

EXPRESS rates are plenty high enough.

WHY do you believe in public ownership?

DESTROY confidence and you invite disaster.

WILL public ownership cost us consumers more or less?

PARTY slogans are meant to mislead from real issues.

A GOOD soldier does not ask for favors because he is a soldier.

RAILROAD affairs in United States seem to be in a muddle.

STATUTE labor that spoils a good road in June is all wrong.

WHY not have gravel on our roads now? It will incorporate better with the spring situation.

FRUIT growers are going to come to their own again. There is a big shortage of apple trees in Canada.

SUGAR beets have made many farmers in Ontario good money this year. There is no reason why our sugar trade should not grow.

BIG contracts are being made in Ontario by old and many new flax companies. If the linen business amounts to much here, this will be a profitable crop for our farmers.

FARMERS in Ontario and Quebec enjoy a friendship established at recent conventions that ought to be maintained. Politicians divide peoples; Farmers and co-operation unite. Which is preferable?

PARTYISM has killed many a farmers' movement. Good farmers may believe in parties as the best means of democratic government, but a farmer who is a party man first, last and all the time is a dead one agriculturally.

THE Saskatchewan Legislature has come out, Liberals and Conservatives alike, for free trade between Canada and the U.S. in natural products and for a gradual reduction to a free trade basis with Great Britain.

ONE OF THE greatest evils that rural people have to fight is that of the high fees charged by professional men for ordinary services. When doctors and dentists can reap $10 to $100 a hour, there is need for less protection to them or to make farming a close corporation.

THE United States is going dry. The *Drovers Journal* of Chicago says this about John Barleycorn: And now John is dead. Peace to his suds. He was a beautiful corpse. Looked so natural you would almost think he was going to hiccough. Let us hope he will be a good corpse and lie still where he is put. May he never erupt through that Eighteenth Amendment and, with grave clothes flying, go disporting himself around the cemetery in the "moonshine."

The DAIRY FARMER *as a* MARKETER

We Must Sell Our Dairy Products Well

By PROF. H. H. DEAN

THE dairy farmer as a rule is not a good marketer. Because of this, the rewards of dairy farming have not been so great as they ought to be, and would have been, had marketing skill been applied to an equal degree with producing skill. It seems to require a special kind of a man to sell goods successfully. The following appear necessary:

1. There should be personal contact with the prospective purchaser. Because of this, most of the leading manufacturers keep men on the road at heavy expense, whose business it is, largely, to maintain personal relations with the firm who is making the goods. This pays and pays well, though to onlookers it seems like a needless expense. If farmers are to make the most of the selling end of their business, it will be necessary to have some persons whose business it is to "push their goods" and keep them posted as to buyers' needs. The average farmer is inclined to say: "Take it or leave it!" This is not good business.

2. The seller must have faith in his goods and his ability to sell goods. Farmers are inclined to fall down at this point. Too often the farmer allows himself to be "bluffed" by a buyer who considers it good business to try to make the seller lose faith in the articles for sale. It is wonderful the difference it makes in the quality of goods whether a man is buying or selling. Some farmers have been astonished at the difference in tone and quality of articles when a buyer becomes a seller. As farmers, we must produce first-class goods, have faith in these goods, and have faith in ourselves as sellers. We need to catch somewhat the spirit of the commercial traveller who gives the impression that there *may be* other lines of goods similar to his which are worth buying, but he hasn't seen them anywhere in his travels!

3. The third requirement is to convince the prospective buyer, that the goods for sale are the "best buy" on the market. It is not sufficient to have faith in our line, we must be able to convince the "other fellow" of the values which we have to offer. This is where selling skill is needed. For dairy goods, a man who acts as salesman should know all about milk, butter and cheese and know their relative food values as compared with other lines of foods. This involves a knowledge of the chemistry of foods, which few salesmen have, but they would be all the better able to handle dairy food products if they knew something of fats, carbohydrates, protein, calories, etc.

4. In the fourth place the goods offered for sale must have value as represented; and the goods must be supplied regularly to the market, and they must be uniformly good in quality throughout the year.

It goes without saying that these requirements cannot be met under present systems of marketing, except in a roundabout and expensive way. This way is by means of the Commission Man—that much discussed (and cussed) individual, who is but a product of the times and systems which have prevailed up to the present. Without the Commission Man in some form, it has been practically impossible to sell large quantities of dairy goods. We may rail at this individual as much as we like, but until our whole system of marketing is changed, the "Com. Man" is with us, and likely to be very much with us for some time to come.

A few years ago the farmers of Sheboygan County, Wisconsin, were the helpless victims of a vicious system of cheese marketing, whereby the buyers "formed a ring" and paid whatever price for the cheese they considered necessary in order to keep the patrons quiet. As a result largely of one man's work, the farmers of this county formed a company, built a warehouse, hired a manager, and were able to sell their cheese at a cost of about one-quarter of a cent per pound, whereas formerly they got but about one-half the price paid by the consumer for cheese.

Bulletin No. 251, published by the Wisconsin Experiment Station, goes into the details as to who gets the consumer's money. The conclusion is: "The farmer gets about half the money paid by the consumer. The remaining half goes to pay distributing costs. Producers and consumers are too far apart. Community effort is needed in standardizing, branding, and marketing."

What Are We Going To Do About It?

For years the farmers have done more or less grumbling about the high cost of marketing. The isolation of the farmer has done much to prevent united action. It was not until the rise of the grain growers in the West and of the U.F. of Ontario and Quebec, that an attempt was made to overcome the serious marketing handicaps for farm produce. Even yet, dairy produce is largely marketed over the Commission Line, because the marketing end of dairy products is practically controlled by a strong combination of merchants who do not propose to allow this trade out of their hands without putting up a strong fight.

The farmers of the Province of Quebec were the first to put the marketing of cheese and butter produced in that dairy district on a sound basis. The writer was very favorably impressed with the account as given by the Quebec Co-operative Company's manager at the recent Dairy Conference at Ottawa, He impressed one with the idea that he knew the business of selling farmers' produce from beginning to end. He is able to get the top market price for No. 1 goods, and of necessity has to take lower prices for lower grades. He emphasized the need of showing farmers the great difference in value and profit between, say, milk-fed chickens at 45 cents per pound and ordinary fed at 20 to 25 cents a pound. It would pay the farmers of Ontario, and of all the other provinces, many times the cost, to establish similar markets in all the leading Canadian cities; and also in the export centres. In this way farmers may be reasonably sure of obtaining the highest market prices for all their goods, at all times. This will need a lot of thinking in order to get the best men to take charge and to put the business on a sound basis. Suitable warehouses will be needed at central points and for perishable goods, cold-storage will be a necessity. At first, this may be rented, but eventually farmers will find it an advantage to own their cold-storage, as in no other way can perishable goods be handled to advantage nor a regular supply be maintained throughout the year.

In addition, the farmer's salesman must be in close touch with the markets by wire and through special market reports. Up to the present these market reports have been prepared largely by dealers or their agents and there has been some doubt as to whether or not they reflect actual market conditions. Recently both Canadian and American Governments have sought to furnish reliable market statistics as to sales made and prices paid. Owing to the rapidly changing market conditions it has been felt that these Government reports are not so "up-to-the-minute" as they should be in order to be of greater service to farmers. There is needs some medium whereby farmers may know how the market stands. It is a common experience for farmers to sell on a "falling market" and for the market to rise soon after the farmer has sold his hogs, cheese, butter or whatever he may have for sale. To know that fifty cents a hundred has been lost on a lot of hogs because of a rise in the market is poor consolation for the man who has fed grain to hogs worth good money; or worse still, has purchased high-priced feed and then lost the profit through unskilful marketing. In the case of hogs particularly, the feed item is the big share of the cost. According to special bulletin No. 30 from the Minnesota Station, feed averages 85.7 per cent. of the total cost of "saleable hogs." The next largest item is Labor, which is 8.4 per cent. of the cost of producing market hogs.

Importance of Marketing Question

Summing up the question of the dairy farmer as a marketer, it looks as if, except in special cases, the producer of dairy goods would fare better to place marketing in the hands of someone who is especially trained in the ways of marketing, but who is under control of federated farmers, so that the best men be engaged and the very best results obtained. There are some big questions looming up with reference to marketing dairy farmers' produce. The milk-producers' associations seem to have solved the problem of marketing milk sold in towns and cities, but the great bulk of milk-producers who are patrons of creameries, condenseries and cheeseries are as yet untouched by the association who are producing milk and cream for direct consumption. Whether it is possible to include these in one large association, or a federation of smaller organizations, remains to be seen. Farmers are waking up to the value of organization, if they are to maintain their place in the sun as given by a more or less grudging public.

All beauties and high producers. Eight noted Jersey cows on the Hood farm, Massachusetts.

WEANING THE CALF

By W. R. Clark

As soon as a calf will eat, hay or grain should be given. The calves should be fed in stanchions so that each one will get its proper share. Calves not so fastened sometimes learn to suck each other and this is undesirable. After feeding the milk, place in the manger a box containing a small amount of grain, preferably oats and bran in equal parts, increasing the amount to correspond with the appetite until the animals are large and well developed. All the hay they will eat should be given, using preferably a mixture of clover, or alfalfa, and some kind of grass, hay. The feeder must be guided entirely by the condition of the calf in determining how much of any one food shall be given. While ill results may come from feeding too much, the aim should be to feed sufficiently well to secure large daily gains.

A GIRL'S ROMANCE *With* POTS *and* PANS

By Virginia Blair

ELINOR, young and lovely and just home from boarding-school, is faced by a situation which has upset her plans. She had looked forward to this first year out of school as one in which the study of music should be combined with a triumphal social season. And now she has been called upon to readjust her plans to the requirements of a reduced income.

Her father's business has suffered because of the war, and the work of the house will have to be done without a maid. Elinor's mother isn't well, and Elinor is to be put in charge of the domestic arrangements.

And Elinor rebels. "It is so sordid."

"It is your first real adventure."

Her eyes are scornful. "Well, if you call *that* an adventure."

"Why not? What did you expect?—that life was to be a flowery road? Didn't you know that there would be storms and rocky stretches, and that you'd have to swing a kettle over the fire, and provide good cheer for your fellow travelers?"

Elinor eyes me pityingly. "You needn't try to gloss it over, Virginia. There isn't any romance in pots and pans. Father says that if I ever get married, I'll be glad of this apprenticeship, but I sha'n't marry any man who can't afford plenty of servants. I don't intend to be a slave."

Now I really have more faith in Elinor than she has in herself. When she marries, it will be because she has found her mate, and she won't ask whether he can keep four maids or none at all. And as for slavery, she will find that we are all slaves of drudgery, if we choose to look at it that way—it is our attitude toward labor which releases us from bondage. Do you remember what Bella Wilfer says to her husband when, waked from her selfishness, she sets herself to help? "I want to be something worthier than the doll in the doll's house."

Elinor being of this generation knows little of Dickens, so I have set her to reading "Our Mutual Friend" and "Martin Chuzzlewit." The chances are that she will come back to me with the toploftical statement that Bella and Ruth were silly little things, who didn't know how to throw off the shackles of domestic drudgery.

But I am not sure that Bella and Ruth weren't wiser than some more sophisticated heroines. They accepted pleasantly the fact that housekeeping was a part of a feminine scheme of things, and they went to work to weave spells of competency over what Elinor calls the "sordid" part of it. And so we learn of Bella's delicious encounters with the Complete British Housewife and of Ruth's beefsteak pie and its captivating consequences. John Westlock and John Rokesmith were triumphant and happy husbands because of the home-keeping of their happy wives.

"'You have such a cheerful spirit!' said John Rokesmith fondly; 'you are like a bright light in the house.'

"'Am I truly, John?'

"'Are you truly? Yes, indeed. Only much more so and much better!'"

One of a girl's star accomplishments is to win a record of culinary achievement.

Now Elinor has lived always in a well-ordered establishment where the silver shines and the table-cloths are snowy, where the service is silent and perfect, where the salads are crisp, the soups hot, and the biscuits brown. But she has yet to learn that back of all this attention to detail which she calls "sordid" is a romance which reaches down to her mother's wedding-day, when, with a heart full of love, she promised to be a helpmate to Elinor's father.

MY own mother contends that "helpmating" is a fine art. She knew nothing of housekeeping when she married. Left an orphan in little girlhood, her guardian placed her in boarding-school, and it was from boarding-school that she was married. There was nothing sordid in her in her first encounters with pots and pans. The road which she had traveled had been a lonely one, and now she was to know the bliss of contributing to the comfort of a beloved comrade. My father said that she spoiled him, but I think that it was a fair exchange, for he cherished her above everything on earth.

They were like two children in their little lovely home by the big blue lake. They had a cow named Crummy, and a pig which was as much of a pet as their big gray cat. My mother used to leave her bread-making to go out and match her skill against my father's at rifle-shooting; and in the early spring, deep in the maple-wood, with the snow still on the ground, and with a logfire illumining the shadows, they would watch the sap all night as it boiled and bubbled, and go home in the white dawn before the rest of the world was awake.

My mother has told me many times of that little first home of theirs; of her kitchen with its yellow-painted floor, the sunshine across the threshold, and the blossoming lilacbush beyond. It was when my Big Sister was a wee baby that, because of my mother's delicate health, my parents left their little home by the lake, and went to the Southland, where I was born.

As my father achieved success, and my mother's cares grew heavier, she still continued what she called her "helpmating." Yet in her larger establishment there was never any of the dreariness of some servant-managed households. To us children it was an exciting event to go with her to market, and see her choose the roasts and the fish and the freshest of vegetables. We knew what it was to follow her to the kitchen and to be ravished by the spiciness and savoriness there. Those were the days of canvasbacks and diamond-backs, of preserves and home-made pickles, of fruit-cake which lasted from Christmas to Christmas. The winter brought oysters, succulent and salty from the famous beds of the Chesapeake, the summer brought hard and soft crabs from the same land-locked, bounteous waters.

As I think of that kitchen with its atmosphere of good cheer, its exquisite order, its promise of plenty, I wonder what are the compensating pleasures of the youngsters of to-day. I am perfectly aware as I write this that there are those who will view with scorn this record of culinary achievement, yet it is well to remember that it is to such hospitable homes that boys and girls look back. It is to such fatted calves that the prodigals return.

I am glad that in those early days I learned the romance of housekeeping. I am glad that I liked to go to market, and to the bakery, and to the oyster-shop with my big blue pitcher. I had a dainty and somewhat delicate appetite, so that it was not so much the food itself which appealed to me as the beauty of the bounty of garden and of sea, with the picturesque background of firelight and of feasting. I was interested in the household-machinery as a boy is interested in the machinery that runs an engine.

But there came a time when I was not interested. Having left behind me the frankness and simplicity of childhood, I began to feel a little scornful of my mother's share in what Elinor calls the "sordidness." It was in the days of our reduced fortunes; but my mother's skilful management made of our house a home. We lived plainly and appropriately, discarding the "frills" which to my youthful pride seemed so essential. I felt that we ought to keep pace with our richer friends. I could not see that it was the very fact that mother would not strive to keep up, which gave to our straitened circumstances the effect of dignity.

The girl is fortunate who in her early years learns the romance of housekeeping.

No Man Cares to Marry a Cook!

IT was not to cookery-books that I turned in those days, but to books which told of Elaine and Lancelot, of Heloise and Abelard, of Aucassin and Nicolette, of Juliet, of Guinevere, of Iseult—I think the tragedies of these great loves contributed in some way to my sense of the importance of my own embryonic emotions. I felt, as it were, by proxy; for my own little affections and friendships were as yet as innocent and as happy as a child's.

In those days I was convinced that no domestic talents could commend me to the golden youths who began to flutter about me. I had more faith in flushing cheek and in sparkling eye, in pretty clothes and in pretty manners. When my mother remonstrated with me on my lack of interest in domestic affairs, I felt that in some way she had failed to grasp the masculine point of view. I am afraid that I even pitied my father a little, wondering if she had not chained him to material things.

And now I find Elinor duplicating my mistakes, and repeating, with the same air of finality, the same words which I once hurled at my mother: "No man cares to marry a cook. He can hire one."

And I can still catch the echo of my mother's response. "My dear, I am not trying to tell you how to win a husband, but how to hold him."

As the years have passed, and I have seen much of life, much of men, and of women, I have been forced to admit the sagacity of my mother's verdict. Men, the most frivolous of them, have a sense of what belongs to femininity, as women have a sense of what belongs to masculinity.

Back of all glamor and glow of courtship, a girl sees in the man she loves the future wage-earner. Let him be deprived of this capacity, and he becomes impossible as a husband. You may say that this is not true, but deep in your heart you know that a man who fails to make a living is a man not worthy of respect, and he is a man unfit for matrimony. And in like manner, back of a man's dreams of a woman as a goddess or as an angel with wings is his dream of her as a home-maker. And if you don't believe this and prepare yourself for it, the day will come when you will be taking the fine edge off of romance, as you feed your bridegroom on burned toast and bad coffee.

Sentiment rarely survives slatternly surroundings. The way to a man's heart may not always be through his stomach, but good digestion makes for good cheer and good temper, and back of good temper and good digestion is good cooking.

So why tempt fate with wilful ignorance? And better is the experiment in your mother's kitchen, with her wisdom to sustain you, than in your new home under the eyes of a disillusioned lover.

MIRIAM, four years a bride, tells of her own first adventures with pots and pans. "I was a perfect butterfly when Ted fell in love with me, but I think

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PREPAREDNESS *for the* HOME NURSE

By SARAH COMSTOCK

IN spite of the strongest barriers yet devised, disease can not always be kept out of the home. To the gentle hands of woman belongs the care of the sick, and every woman should realize that the time may come when such a care will be hers. This does not mean she should fit herself for professional service by long years of hard study in hospital training-schools, but it does mean she should learn the simple and valuable lessons for the care of the sick in her own home.

It makes us catch our breath for a moment, the bomblike statement of Miss Carolyn Van Blarcom, former Assistant Superintendent at the Johns Hopkins Hospital Training School for Nurses. "There is nothing," she says, "that a nurse does for a patient which, if wrongly done, may not cost that patient his life."

We gasp. There's temptation to yield to panic. But panic is not the part of the gallant Home Nurse. If sickness, despite our most vigilant outposts, has forced its way in, there's a battle ahead. But the only kind of fighting worth a continental is the kind of fighting that sees but one outcome, and that outcome—conquest.

The day of the long-faced doctor and nurse is past. Hopefulness is the key-note of the modern hospital. Make it the keynote of your home hospital. Fight to win, and let your patient feel the very air full of your sense of winning. And now for the details of the campaign.

Preparing For the Fray

FIRST of all, make sure that it is safe for you to act as nurse —ask your physician this vital question and be guided by him. No course in home nursing equips any one to carry through such critical diseases as typhoid or pneumonia, for instance.

But suppose you are permitted to act throughout this campaign. Then shoulder arms, and forward, march! Make ready your hospital. The three requisites are sun, air, and quiet. Choose whatever room in your house best affords these three, and turn out any member of the family in order to attain them. Sun and fresh air are essential, because they are the best cleaners that exist. They purify a polluted air better than any disinfectant. Furthermore, they invigorate. Quiet is essential, because it clears away such débris as worry, irritation, friction of personal contacts, petty excitements; in short, all the little nervous rubbish which gets in the way of the healing forces. These forces need the path cleared for them to go forward. Even pleasant excitements block that path. The room must be out of sound of the neighbor's Polly who eternally wants a cracker. You, as nurse, must tread softly, speak in low, but cheerful tones, move and work without flurry, and *keep out visitors.*

Strip the room as far as possible of dust-catching draperies and ornaments. A character in one of Miss Sinclair's novels speaks of dust as "terrible when aroused." It is. There lies your poor patient—he can't escape from the dusting-process and he feels on the verge of strangling, unless you mercifully avert the disaster. The secret lies in a bare floor and rugs which can be swept outdoors, in having but few furnishings, and in damp or oiled cloths to wipe floor, furniture, and small articles.

To change a sheet with the patient in bed, fold half the sheet in folds lengthwise, place the folded parts close to the patient and turn the patient over on the smooth part.

But there's one all-important piece of furniture, and that's the bed. Quite as important as the article itself, too, is the way you make it. "Young ladies!" I heard a veteran nurse cry indignantly to a class of probationers, as she pointed to creases in an under sheet, humpy corners, and down-in-the-mouth pillows, "If I were an invalid, I'd rather have a nurse who knew nothing about *materia medica* and bacteriology than one who didn't know how to make a bed!"

Giving a foot bath to a patient in bed.

No matter what the frame, you must have a good spring and a good mattress of either felt or hair—preferably the latter. A firm mattress is more comfortable than a soft one, as it will not sag into a hollow, and if especial firmness is demanded by the physician—perhaps after a surgical operation—you may bore ventilation holes in two boards and place them underneath.

The mattress pad of quilting is spread first, then the lower sheet, then, if required, the rubber sheet. Oilcloth may be substituted. This protector is of a size to cover the centre of the bed when laid across, and to tuck under well at each side. The draw sheet is used with this: a strip of sheeting of similar size and shape, laid across the bed directly over the rubber and easily drawn out from under the patient. Or you may fold a large sheet to the size desired, laying it crosswise. Both are pinned stoutly to the mattress.

In changing a pillow support the patient's head and neck by resting the head on your arm, your hand will spread out, supporting the neck.

There's no test of a nurse more subtle than the lower sheet. It speaks for her or against her, and louder than words. If it is not spread so smooth that it looks as though a lawn-roller had passed over it, if the four corners are not folded as trimly as the wrapper of a candy-box and fastened to the mattress with safety-pins, if it is not kept smooth by frequently reaching in and stroking, and if every crum and the like is not brushed away from its surface, then the truth is out.

The upper sheet is surmounted by one or more blankets, as they give warmth without weight and are more easily washed than quilts. The pillows should be of good quality and abundant; four to six will prop up a patient comfortably in a sitting posture—don't try to get along with fewer. And have a little "tuck-in" pillow besides. It's a friend in need. If you could once watch an expert nurse demonstrate the uses of that small pillow upon the long-suffering *papier maché* invalid that lies in her model hospital bed, you would realize its value. Now the poor dumb invalid finds its stiff neck eased, again its lame knee or ankle is propped, and another day the "tuck-in" soothes its abdominal agony.

SO your little hospital is now fairly in order. And next come the doctor's visits. For his sake, for the patient's sake, for your own sake—be ready for them. You'd stand small chance as a professional nurse if you stumbled when you tried to report symptoms or told him you were sorry, but there wasn't any warm water, when he wanted to syringe an ear.

The first thing he asks you for may be information. He wants to know everything that you have observed since his last visit. Train yourself to make such observations closely and to report them accurately. There's no over-emphasizing this last point. It's the pitfall of the amateur nurse. Her besetting sin is to give the doctor her opinions when what he wants is facts.

"Oh, doctor, Edith was much worse during the night. I'm sure she can't live through another night like that!" This is the sort of thing the physician has to contend with in many homes.

"Worse? In what way?" he inquires with what sympathy he can muster. Already his thermometer and watch have shown Edith's condition to be improving by strides.

"I hardly know—but she complained of feeling so miserable. . . . " the report trails off vaguely.

Now the report that does help a physician is the written report that states salient facts. If there is fever, he will tell you how often to take the temperature, and you should write it down as soon as taken. He may instruct you, too, to watch the pulse and respiration. The excreta should be observed closely. Increase or decrease of appetite has significance; so has the length and character of sleep. Any unusual symptoms should be described fully; if the patient has felt some pain, has had a chill, has shown any change in appearance, such as a peculiar color, or a puffiness under the eyes. This puffiness, by the way, may display itself on feet or hands, and should never be ignored. Vomiting, a hemorrhage, or a surprising cough may be most important. Even a change of expression sometimes has deep import; experienced nurses know the pinched, distressed look which is a danger signal, and the blank lack of all expression which is another. Then, too, there are mental changes which mean much, such as wandering of the mind, loss of memory, and delirium. Provide yourself with one of the forms used by nurses and keep it up day by day.

All of which does not mean that you are to explain such signs. The trained nurse herself is warned against drawing conclusions. But it does mean that your eyes are to be open persistently, and that you are to tell the doctor fully just what you have observed—let him draw the conclusions.

The articles which he will be mostly likely to want close at handarehotand cold boiled water, a saucepan in which his instruments can be immersed, clean tumblers, and towels. Have an abundance of towels always fresh. Doctors display an insatiable appetite for them, leaving the ground behind strewed with the remnants of a veritable towel-feast. And in the doctor's absence, too, you will need to be more than ever

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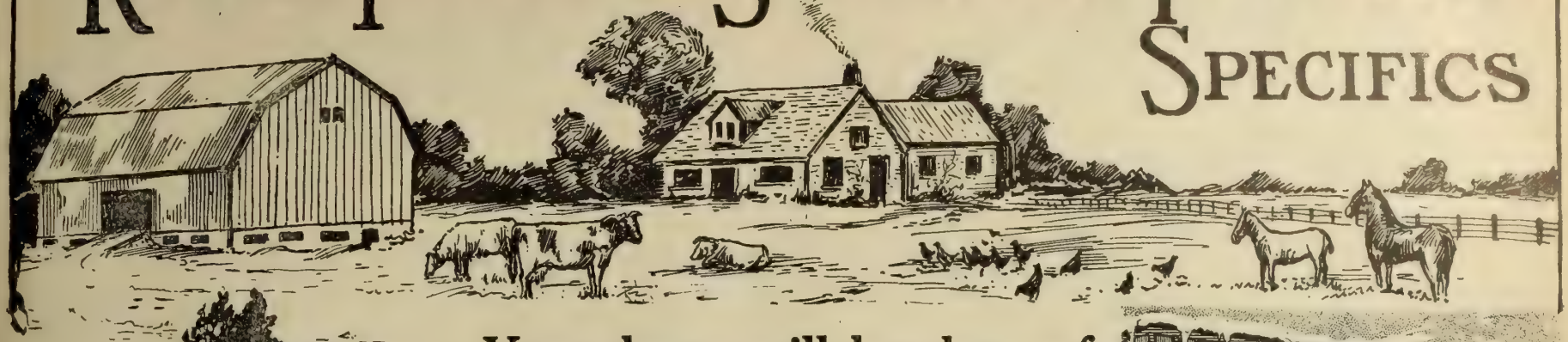
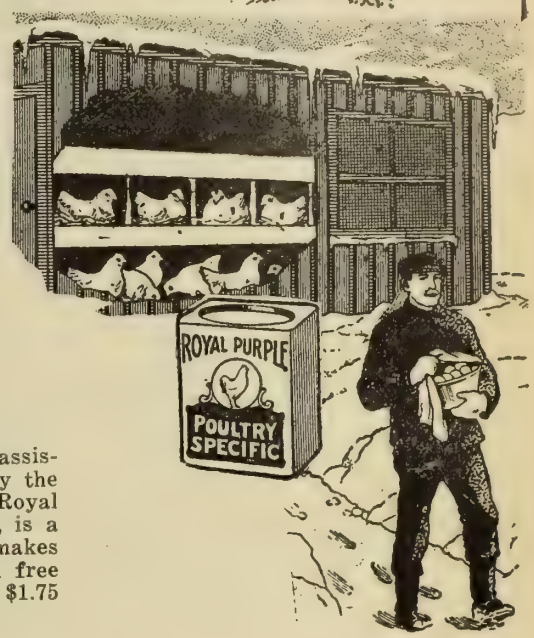
THE BETTER HALF OF THE CABINET
Mrs Carvell
Mrs N.W. Rowell
Mrs A.L. Sifton
Mrs S.C. Mewburn
Mrs J.A. Calder
Mrs C.J. Doherty
Lady White
Lady Borden
Lady Kemp
Mrs Albert Sevigny
Madame P.E. Blondin
Mrs G.D. Robertson
Mrs Arthur Meighen
Mrs Martin Burrell
Lady Lougheed
Lady Foster
Mrs T.A. Crerar

"ROYAL PURPLE" STOCK AND POULTRY SPECIFICS



Your hens will lay lots of eggs Winter and Summer

Under the most severe weather conditions you will get plenty of eggs if your hens are properly housed and fed.



"Royal Purple" Poultry Specific

In summer fowl get grain, herbs, grass and insects which are Nature's assisants for producing eggs. In the winter and spring, fowl get practically the same grain, but must have a substitute for the herbs and insects. Royal Purple Poultry Specific, manufactured from roots, herbs, minerals, etc., is a most perfect substitute, increases the egg production at once, and makes the hens lay as well in winter as summer—keeps the fowl active and free from cholera and kindred diseases. Sold in 30c and 60c packages, also in $1.75 and $6.00 air-tight tins.

Secure More Milk From Your Herd

You can increase the flow of milk from 3 to 5 lbs. a day by using

"Royal Purple" Stock Specific

Mr. Norman G. Charlton, Scott, Sask., states:
"I am from Ontario and fed your Royal Purple Stock Specific when in Bowmanville. My cows made the largest average and tested 5 pounds over average at G.M.P., Brownsville. I believe you make the best conditioner on the market."

The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results, and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor. Royal Purple Stock Specific is put up in 60c packages and large $1.75 and $6.00 tins. Secure our products from our dealer in your town.

This pure-bred Holstein bull calf was raised by L. H. Lipsit, Straffordville, Ont., and took first prize in his class at the West Fair, and also took first price for the best pure-bred Holstein bull raised on "Royal Purple" Calf Meal.

"Royal Purple" Calf Meal Reduces the Cost of Feeding Calves 75%

When calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk.

Mr. Geo. W. Collins, Plainfield, Ont., writes:
"Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and fed them nothing but your Calf Meal and water, and say they are doing well on it as they did on the whole milk."

This Baby Food for young animals is partially predigested, and can be fed to the youngest animals with perfect safety. IT WILL NOT cause stomach or bowel trouble, which seriously affects the health of young animals, Royal Purple being a sure preventive for scouring

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

"Royal Purple" Lice Killer

Gets Rid of Them Quick.

Percy Prewer, Cross Creek, N.B., says (in a letter of Aug. 7th): "I have used your Lice Killer on a cow that was badly infested with lice. It soon rid her of them."

W. L. Carlyle, Reid's Mills, Ont., says (in a letter of May 18th): "I cannot do without it, as it is the best we have ever tried without a doubt, both for cattle and fowl."

Try it, Mr. Farmer, and see for yourself. Secure "Royal Purple" Lice Killer from our dealer in your town. Should there not be any, write us.

Manufactured by

The W. A. Jenkins Manufacturing Company
LONDON, CANADA

We also manufacture the following valuable remedies for stock and poultry:

Royal Purple Cough Cure for horses, 60c tins.
Royal Purple Liniment for man or beast, 60c bottles.
Royal Purple Disinfectant, 30c, 60c, $1.15 tins.
Royal Purple Worm Powder for animals, 30c packages.
Royal Purple Roup Cure, 30c tins.
Royal Purple Colic Cure, $1.15 bottles.
By mail, 10c extra.

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The W. A. Jenkins Mfg. Co., London, Canada.

Gentlemen:
Please send us your Free 80-page booklet describing all common diseases of stock and poultry and telling how to build henhouses, also how to raise calves without milk.

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Worth keeping!

These new hints on quick household cleanliness

How to clean your meat chopper

If you've had trouble cleaning this useful kitchen helper, try a tablespoonful of Gold Dust in a dishpan of hot water. See how quickly and thoroughly Gold Dust dissolves the grease — how fresh and sweet it leaves your chopper. On baking day, too, Gold Dust makes a quick "clean-up"—bread mixer, pans, rolling pin, spoons and all cooking utensils thoroughly cleaned in record time.

Well-kept, pretty china

In any water — hard or soft — and for all kinds of dishes, there's nothing like a tablespoonful of Gold Dust to a dishpan of hot water. That's because Gold Dust so gently and effectively gets rid of the grease, leaving a sparkling cleanliness. Many women prefer Gold Dust to the white soaps because it acts so much more quickly and thoroughly.

Quicker, better dishwashing

If you want to get rid of drying your dishes with a towel, try this: Use a tablespoonful of Gold Dust to a dishpan of water, wash all dishes of one kind together, scald with boiling water in a wire dish drainer. It is because Gold Dust so thoroughly dissolves the grease that the dishes come out clean and sparkling.

What dishwashing does to drain-pipes

Almost everybody knows what clogs up the drain-pipes — the grease from dishes and pots and pans, which hardens and keeps the water from flushing away bits of waste from the sink. Gold Dust, when used for dishwashing, not only dissolves the grease on the dishes, but keeps your sink and drain-pipe free, unclogged and sanitary.

GOLD DUST

The Busy Cleaner

Let the GOLD DUST TWINS do your work

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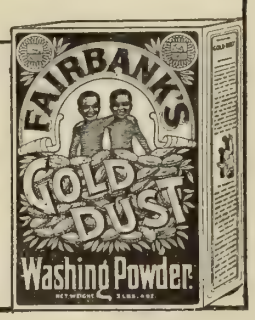

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Pies *and* Pie Crusts

THE quality of pastry depends, naturally, on two things—the materials and the way they are handled. The cook who tries to make short, flaky pie crust from a strong bread flour has an almost impossible proposition ahead of her. A good bread flour must contain a high per cent. of good, tough gluten to give a light, springy loaf, and, of course, this toughness is the last thing we want in pie crust. If a strong flour of this kind is used it takes an enormous amount of shortening to get any degree of tenderness or flakiness. A good general purpose flour may be used, but it will be found a great economy in shortening to keep pastry flour on hand just for pie crust and cookies. This flour is absolutely no good for bread and used alone, will not give the best results in cakes and biscuits where lightness in texture as well as shortness is important. A half-and-half mixture of bread flour and pastry flour, or a good general purpose flour, should be used for cake, biscuits and other quick breads.

Regarding "shortening" or fats to use in pastry, butter makes a well-flavored pastry and one that browns nicely, but it does not give as flaky a texture as lard. Lard is usually cheaper than butter, gives an excellent, flaky, tender texture but is not so well flavored as butter, and the color is whiter. A mixture of butter and lard, or butter with some of the well-tried, commercially prepared shortenings, gives the best results. Sweet, clarified dripping, especially from pork fat, makes a short, well-flavored pie crust, but is usually a little darker in color than when lard is used. Dripping from chicken, duck or goose gives a pastry deliciously flavored but rather soft in texture. Beef dripping gives a rather hard, brittle crust, so it should be used if possible in combination with some of the softer fats.

Some people believe that a little baking powder or soda added to the flour makes pie crust more digestible. It is impossible to get the same flaky texture when powder is used. The crust may be light but it is light because it is porous and if used on a bottom crust is almost sure to soak. It is best used in deep pies with only a top crust, and in meat pies where little shortening is used. If a fairly strong flour is used a little cream of tartar or lemon juice makes a more tender crust because the acid softens the gluten of the flour.

General Rules For Making Pastry

1. Use good materials.
2. Have everything as cold as possible.
3. In mixing the shortening into the flour use a knife or the tips of the fingers. Handle always as lightly as possible.
4. Add the water gradually, cutting it in with a knife.
5. Use only enough water to make the paste hold together.
6. Use as little flour as possible on the board.
7. Roll lightly and only one way. Rolling backwards and forwards toughens pastry.
8. Roll only on one side; do not turn pastry over.
9. In making puff paste, where part of the shortening is put in pieces on the rolled-out paste and the paste folded over and rolled again, keep the paste and the shortening about the same temperature. If the fat begins to come through in rolling set the paste away to chill before going on.
10. Pastry, puff paste especially, is better if kept over night (closely covered) before making up. Baking-powder paste of course could not be kept.

Plain Pastry

4 cups flour
1 cup shortening
1 teaspoon salt
Cold water, about one cup

Sift the flour and salt. Rub in the shortening lightly, using a knife or the tips of the fingers. Add the water gradually, cutting it in with a knife. Stirring with a spoon makes a heavy pastry.

Puff Pastry

4 cups flour
1½ cups shortening (1 cup lard, ½ cup butter)
1 teaspoon salt
Cold water, about one cup

Sift the flour and salt, rub in the lard and cut in the water, and set in a cold place to chill. Put the butter in a bowl and work it with a wooden spoon until it is waxy. In warm weather this may be unnecessary. Roll out the dough one-half inch thick and in a rectangular shape. Over half the dough dot one-half the butter in little pieces. Fold the other half of the dough over and roll lightly. Repeat, using the rest of the butter. Set away to chill and roll out when ready for baking. For a richer puff paste equal quantities of shortening and flour may be used and more rollings and turnings given. Puff paste is not used for bottom crusts except for a pie shell or for tarts.

Raisin Lemon Pie

2 cups raisins
1 lemon, sliced
¾ cup sugar
Water

Cook raisins and lemon in water until tender, add sugar and simmer a few minutes longer. If necessary boil the juice down after taking out the raisins so it will not be necessary to thicken it. Bake in two crusts.

Note.— A few spoonfuls of sugar mixed with half as much flour sprinkled over the bottom crust of a juicy pie will keep it from soaking.

Raisin and Cranberry Pie

1½ cups cranberries
½ cup raisins
1 cup sugar
½ cup water

Cook until the fruit is soft and slightly jellied, line a pie dish with paste, turn in the cooked fruit and cover with strips of paste or with a whole crust or bake without a top crust and when done cover with a meringue (stiffly beaten egg white with sugar) and brown in the oven.

Prune Pie

2 cups cooked prunes
½ cup sugar
1 tablespoon flour
Juice and grated rind of ½ lemon

Stone prunes. Line pie-plate with paste. Mix flour with sugar, put half in bottom of pie shell, add prunes and lemons, and the remaining sugar, cover with top crust and bake.

Mince Meat

4 cups cooked beef, chopped
2 cups chopped suet
8 cups chopped apples
1 cup brown sugar
2 cups molasses
1 cup chopped cranberries
1½ pounds seeded raisins
1 pound currants
1 pound shredded citron
2 tablespoons salt
1 tablespoon cinnamon
1 tablespoon mace
1 teaspoon cloves
1 teaspoon allspice
½ teaspoon pepper
1 quart boiled cider, grape juice or syrup from sweet pickles

Mix and cook slowly about two hours, stirring frequently. Store in jars or in a stone crock.

Green Tomato Mince Meat

1½ cups green tomatoes, chopped
1½ cups apple, chopped
¾ cup raisins, seeded and chopped
1 cup brown sugar
¼ cup beef fat melted or suet
2 tablespoons vinegar
¼ cup water
¾ teaspoon cinnamon
½ teaspoon mace
¼ teaspoon cloves
¾ teaspoon salt
½ cup fruit syrup or grape juice

Mix and cook slowly for one hour. This quantity fills two pies.

Lemon Pie

1 cup boiling water
3 level tablespoons cornstarch
1 scant cup sugar
Juice and grated rind of 1 lemon
1 egg
1 tablespoon butter

Dissolve the sugar in the boiling water, mix the cornstarch with a little cold water, stir into the hot water and continue stirring until it has thickened and boiled a few minutes. Separate the egg, beat the yolk in a bowl, add the lemon juice and grated rind, and pour in the hot liquid, stirring constantly to prevent lumps from forming. Return to the saucepan, cook a few minutes longer, add the butter and pour into a baked pie shell. Beat the egg white stiff, add sugar, frost the pie leaving the meringue rough on top, and set in the oven to brown.

Lemon Sponge Pie

1 cup sugar
4 tablespoons flour
Butter the size of an egg
Pinch of salt
Yolk of 2 eggs
2 lemons
1 cup milk
Whites of 2 eggs

Mix the first five ingredients and beat to a cream. Add the juice of the lemons and the milk and stir in the stiffly beaten egg whites. Turn into an unbaked pie-crust and bake. To tell when this is done test with a knife like a baked custard. When the knife comes out not milky the pie is done.

PREPAREDNESS FOR THE HOME NURSE

Continued from page 17

provided with plentiful linen—towels, sheets, and pillow-slips—for every sickness is a series of emergencies.

Until the physician has made his first visit, you can't know just what supplies will be needed for your campaign. Campaigns differ, and the munitions accordingly. An ear-syringe won't be of much use in fighting appendicitis nor a bed-cradle against malaria, and the average household can hardly be expected to keep these special weapons on hand against the catastrophe which may never happen.

But there are some supplies under the head of preventive measures, and these will very likely come into play now. The hot-water bag, the fountain-syringe, and the ice-bag should be always ready. The gauze for flaxseed poultice and mustard plaster, the cloths and cotton-batting used in the application of these and the mustard and flaxseed-meal—of course you have them, all stowed away in some dustless place with your bandages. Clinical thermometer, medicine-glass, medicine-dropper—roughly summed up, there's a pretty good equipment to start the battle.

LET'S see what is required of the nurse. First of all, she's got to have imagination—very human work calls for imagination, from constructing a suspension bridge to patterning the heel of a satin slipper. In the nurse's case, she's got to use her imagination to *put herself in her patient's place.*

He's a human being, and a very primitive one for the time. His wants are for simple creature comforts. And if her imagination is at work, she can feel just what he is feeling—the need of more air, or more warmth, or a drink of water, or another pillow. Maybe, when you sift it down, good nursing comes pretty near to that simple, old-fashioned virtue which used to be called by so provincial a name as kindliness.

The day is likely to begin at the somewhat disturbing hour of dawn—or before. The morning hours between two and five are the time at which the temperature of the human body is at lowest ebb. Some claim that this often accounts for the idea we have that the weather is turning cooler. The normal human rouses, pulls up a blanket, and dozes once more. The sick human needs a nurse to watch and do it for him. A chill may have serious results. And if by chance the chill does occur before you are on hand, then set to work double-quick to rub limbs, apply the hot-water bag, and give a hot drink.

A little later your patient wakes for the day. And at this hour he needs all the cheerful vigor you can put forth. He feels, as he will probably confide, "miserable." It is true, but there's no cause for alarm unless definite symptoms are bad. The lowered vitality of the dawn still remains, and not until the period from five to ten at night will his temperature reach its height.

Reassure him, take his temperature if the doctor has ordered it, then bring a hot drink at once. Cocoa, beef-tea, milk, tea, or coffee—any such liquid heat brings prompt response. Remarkable how much better the outlook is—not such a pessimist after all, are we?

You now have a chance to begin a preparation of the real breakfast. While this is under way you can give the patient his preliminary toilet. And it's worth while remarking that if there's one thing above all other things which a nurse should cultivate in her habits of execution that thing is exquisite daintiness. It keeps the patient in a perpetual sense of being refreshed.

Bring basin, wash-cloth and towels to the bedside and bathe his face and hands. Cleanse the teeth with a tooth brush if possible; if not use bits of aseptic gauze and throw them away after using. Tooth-powder is troublesome, but an antiseptic wash is important, such as a few drops of listerine or peroxide of hydrogen, or glycothymolin in water. Give the hair a few light touches about the forehead with the brush, reserving the further care of it until later.

Now for the meal. The helpless patient takes liquid nourishment from a feeding cup. But if he is not helpless, prop him up comfortably and slip over his shoulders some wrap which has sleeves. If your feminine patient begins to show interest in whether this garment is pink or blue, take heart and encourage such interest. Recovery lies this way. And it's a good sign, too, when her brother fusses as to which flannel jacket you bring him.

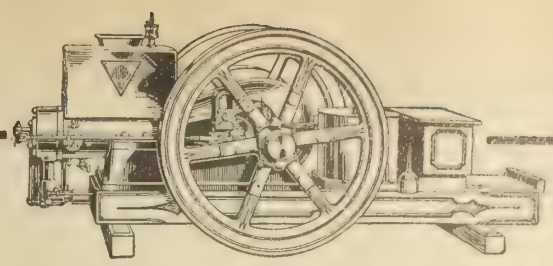
A CLEVER nurse can actually create an appetite in many a patient by the way she serves a meal. Even the mournful gruels may be made as charmingly appetizing as a wedding breakfast! A light tray and individual dishes, such as dainty little cream-pitcher and teapot, with doily and napkin like the proverbial driven snow, should appear with fascinating suddenness—to let the invalid watch the preparation is disastrous. If you are nursing a chronic case, or one which promises a long stretch ahead, it will be worth your while to invest in one of the bedside tables—a little board attached to a strong standard which holds it out, like a reaching arm, over the bed. This can be adjusted to any height, and it is useful for serving meals, for holding book or magazine, for invalid occupations—in short, it's useful all day long for countless purposes.

The next thing to do is to let the patient rest. Fatigue always watches, just around the corner, for every sick person. Never forget this. You have your own duties, setting the room to rights and so on. Busy yourself for half an hour before you begin the patient's toilet. Then make ready for the bath.

There are baths to reduce temperature, to induce perspiration, to conquer delirium, for any number of different purposes, and their temperatures and solutions are endlessly complex. If you are required to give any special form of bath, the doctor will instruct you, but in general you will be called upon only for the cleansing sponge, once a day, and the vital rules of that bath are: protect your patient from exposure, and protect him from a wet bed. Shut drafts out of the room. Have ready the basins of warm water with a reserve supply of hot and cold (follow the physician's direction as to temperature), soap, wash-cloths and towels—and a very large towel or clean old blanket to protect the bed.

The principle of the invalid's bath is to bathe but one portion at a time, keeping the rest of the body covered. Begin with face, neck, and ears, laying the protector under them, using first a damp, soapy cloth, then a cloth wet in the basin of clear rinsing water. Dry these parts thoroughly before proceeding.

Next, the gown is removed, the protector slipped down, and the chest and abdomen quickly bathed and dried; then, while lying on the side, the back, arms, and legs. Thus each part is exposed for



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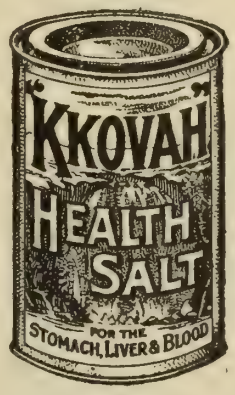
go through life looking at the pavement. It may be laziness—or liver: probably a little of each. There's no need for it. Start the Kkovah habit—a teaspoonful in water first thing in the morning—and you'll walk with head erect, filled with the joy of living.



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only a few moments. If even this exposure creates a chill, it is possible to reach in under the covers and do the entire bathing this way, with a blanket over as well as under the patient—the two protecting blankets to be removed the instant the process is over, and hung out to dry. By wringing out the washcloths well, and taking pains in every way, it's not hard to keep the bed perfectly dry throughout. Place the footbath on a chair and turn the patient across the bed; or slip the basin into the bed on a rubber sheet, release the bedclothes, and let the patient draw up his knees.

Then there's the hair to be combed—begin at the ends, if it's long, and work upward, finally braid it in two braids—and the bed to be made for the day is fairly started. As the hours pass, there will be many little breaks—the other meals, the medicines, the naps, the frequent airings. As to the latter if you will bear in mind that new air is the most important medicine your patient can have, you'll be a better nurse. Once an hour, in the usual case, is none too often to throw an extra covering over the bed, screen the patient from drafts, then fling windows wide. The temperature usually advised is about sixty-five degrees by day, fifty-five by night, with a slight increase for very old persons.

AND at last comes bedtime, about nine o'clock. You are both ready for it. A warm bath of face, hands, and feet; a brushing-up of the bed, a shaking-up of the pillows; a gentle rubbing of the whole body with diluted alcohol warmed in a pan of hot water, winding up with long, comforting, sleepy strokes down the spine; and then to sleep, which heals with a magic that is nature's own secret.

Many a little trick known to the trained nurse will help you through your difficulties if you are in charge of a patient who is either temporarily helpless, or who may perhaps be stricken with some prolonged or incurable disease, and will lie so for many months, perhaps even years. There's the matter of making a bed with a patient in it, for instance. Of course the under sheet, or draw-sheet, or anything that lies under the person, is the chief problem. And that problem vanishes, presto! if you will simply turn your patient to one side of the bed, spread half the sheet over the vacant side, roll the other half lengthwise (or fold it in long, back-and-forth folds), turn the patient back upon the spread half of the bed, and there behind him lies the long roll, ready to be spread in its turn. It 's so simple we wonder why we never thought of it ourselves!

Of course the removal of under bedding is accomplished by the same trick of lengthwise rolling or folding. The upper bedding is easy enough to manage, with the one important warning that the patient should never be exposed. If you'll untuck the sheets and blanket at the bottom, and tuck in the fresh ones before removing the first, you can accomplish this feat without trouble. Change the gown, too, by degrees, removing the sleeves of the soiled garment and slipping on the sleeves of the clean one before removing the first one altogether.

In lifting your patient, your thought ought to focus on the part of his body that may be hurt by the moving. Whether there's a broken limb, or a pain in some organ, the part that suffers needs your attention. It must be specially supported to avoid jars. If he is able to put his arms up over your shoulders, it will help; you can slip yours around his waist and lift without a wrench. If you have an absolutely helpless patient to deal with, you will need as assistant to put one arm under the invalid's lower back, the other under his knees; meanwhile, you will place one arm under the middle back, the other under the neck; you will find the balance perfect, and you can lift the weight easily from one side of the bed to the other, or even farther.

An air-cushion may be needed in the case of protracted illness. There is always danger that the pressure of constant lying in one position may cause an abrasion of the skin, with the serious result that you have an open wound to combat, as well as disease. Do everything to prevent this by frequent changes of position and applying alcohol to the threatening spot. Such an injury is bad enough under any conditions, but infinitely worse if one is ill, for a diseased system does not make for quick healing, and there is far greater risk of poisoning. The air-cushion is an inflated rubber ring, placed to surround and slightly lift any irritated spot. Cotton-batting can be bound into a similarly shaped cushion by wrapping it with a roller bandage.

ALL that's known nowadays about communicable diseases, since the days when the sinful germ first came to be understood, is so extensive that it's a difficult matter to sift it down to a few cardinal *don'ts*. However, the nurse who once gets the thought of *isolation* and its full meaning firmly fixed in her mind will work out details for herself. Remember, these diseases would come to a dead halt to-day, would be absolutely stopped for all time to come, *if nobody passed them on to anybody else.* Grasp that thought. What does it mean to you?

It means that your patient, stricken with one of these diseases, is to be taken at once to a room which can be kept apart from the household. It means that this room should be stripped of everything but the barest essentials, and that the furniture left in must be wiped off with a disinfectant solution each day and the bare floors likewise. It means that only you and the doctor should enter this room.

There are three important ways in which disease is spread. One is by means of the discharges from nose, throat, or even the ears; this is true in measles, scarlet fever, in most of what we call "children's diseases"; also in grippe and tonsilitis. This means that all eating utensils, handkerchiefs, and napkins must be sterilized by boiling. Another means of infection is by the excreta. In diseases where this is true, as typhoid, the excreta must be disposed of at once and disinfection must follow. A third is by means of the little crusts which follow some rashes, particularly that of chicken-pox. Formerly it was believed that these were the chief carriers of the "children's diseases," but scientists nowadays attach much more importance to the catarrh-like discharges. However, the question is still debated; therefore, ask your doctor just what the risk is in your particular case, and obey his warnings.

All bedclothes, as well as the patient's clothing, should be carried away from the room in a sheet which is wet with a disinfectant solution, and then be disinfected.

Protect yourself. Have your own dishes, get all the fresh air you can, avoid your patient's sneezes and coughs, and *keep yourself fit so that you may be resistant.* If you're a good nurse, your home and the world both need you. Take care of yourself!

NOTE.—*A second article on Home Nursing will appear in an early issue.*

YEAR'S GRAIN EXPORT

A summary of Canadian trade for the last three years issued by the Dominion Bureau of Statistics shows that the exportation of grain from Canada during 1916 was 210,427,607 bushels of wheat, valued at $244,322,504; of oats, 73,400,109 bushels, valued at $36,126,457; and other grain, 13,290,433 bushels, valued at $10,251,925. During 1917, 137,022,900 bushels wheat, valued at $310,788,803; 55,950,093 bushels oats, valued at $36,934,437; and 8,963,892 bushels other grain, valued at $10,465,231; and in 1918, 76,602,715 bushels wheat, valued at $181,245,016; 34,879,920 bushels oats, valued at $30,370,762; and 6,360,175 bushels other grain, valued at $10,929,184. The figures are for the twelve months ending November in each year.

BARREL FLOUR EXPORT

During the twelve months ending November, 1918, Canada exported 9,799,927 barrels of wheat flour, valued at $104,808,244, as shown by figures compiled by the Dominion Bureau of Statistics.

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9050—Little Girl's Dress 4 to 12 years

9202—Little Boy's Suit 2 to 6 years

8287—Lady's Apron or House Dress. 36 to 48 bust

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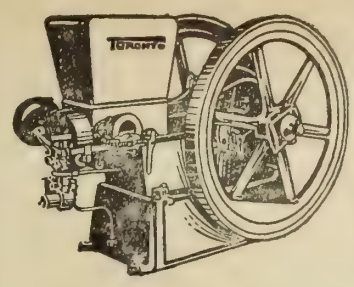
8777—Little Girl's Dress 2 to 8 years



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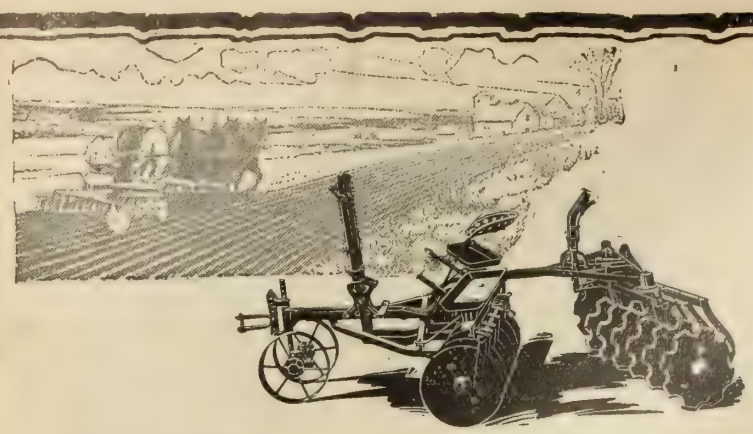

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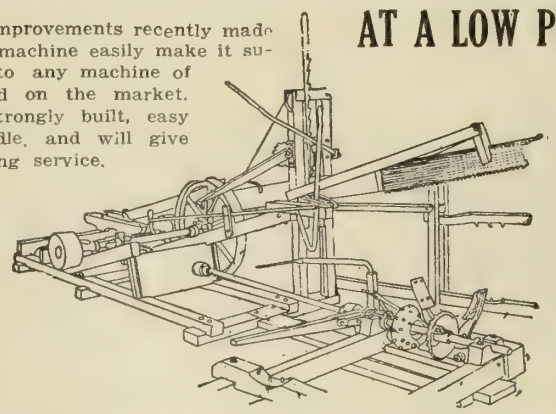

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FARM ENGINEERING

All About Piston Rings

By R. D. A. DRUMMOND

I FIND only too often that tractor owners, whose tractors are equipped with four cylinder motors, do not get as much use out of their machines as they should, for the simple reason that they allow the compression to get away past the rings.

Removing the piston rings.

Piston rings will wear and, if dust is being drawn into the motor, the rings will wear very quickly so that they are soon worn too small to hold compression. Sometimes the rings will be stuck in the grooves, due to carbon getting in around the edges and practically soldering the ring to the sides of the groove.

If compression gets to leaking past

All carbon and dirt should be removed from the piston. See that the oil holes are free as at "A"

the rings, it is time to remove the pistons and see just where the trouble lies. If the rings are badly worn or broken, they can be broken out of the grooves but, if it is thought that they can be used again, they should be removed very carefully.

A piece of tin or other thin metal, such as a case knife, is slipped under the

Fittings the rings to the grooves.

point of the ring and then worked around to the opposite side. Two strips are then slipped under the points and the ring removed over these strips.

This method of removing rings protects the rings, the piston and, last but not least, the fingers and patience of the man who is doing the job.

After the rings have been removed, all carbon, dirt and other matter which doesn't belong there should be scraped off the piston and out of the grooves.

While doing this scraping, be sure to clean out the oil grooves and, if your piston is supplied with oil holes, be sure that these holes are thoroughly cleaned out. After this scraping is done, the rings should be scraped and the piston and rings washed in kerosene.

If new rings are needed (they generally are), the operator can save himself a whole lot of trouble by doing the job right.

The rings should first be slipped into the cylinder in which they are to be used, and, when in position, there should be an

If ring should stick, rub it on a piece of emery cloth.

opening between the ends of the ring, about the thickness of an ordinary sheet of writing paper. If there is no opening, the ends should be filed a little until the proper sized opening is obtained.

The next job is to fit the rings to the grooves in the piston. This is done by holding the ring in the position as shown here and running it around the piston. When held in this position, there should be just an appreciable play at the outer edge of the ring.

If the ring should stick in the groove, it is too wide and should be dressed down by rubbing on a piece of emery cloth which has been tacked into a board.

Before finally placing the rings on the pistons, they should be examined for rough edges and any which are found should be removed with emery cloth. After using emery cloth on a ring, the ring should be washed in kerosene.

POWER FROM CREEK

S. G. H., Ontario.—We have a small creek running through our farm that I would like to harness for power purposes.

This stream is a live little brook, flows about 15 or 20 cubic feet per minute, and often more. There is a good place for an earth dam to make a pond.

There is a good fall from pond. Could get over an overshot wheel with a short tube, or with a tube 400 or 500 feet long. 12 or 15 in. diameter. I could get 30 or 35 feet head and with a good wheel would get good power, but I do not know whether it would be consistent with cost.

Answer.—This stream is probably not large enough to warrant the expense of building a dam and installing

n wheel. 1 cubic foot of water weighs 62.5 pounds, hence 12 would weigh 750 pounds. But as a water-wheel is only about 80 per cent. efficient, the weight actually turned into power would be 80 per cent. of 750 = 600 pounds. If this fell 1 foot the energy would be 600 foot-pounds. 1 horse-power equals 33,000 foot-pounds per minute, hence with 600 pounds the head necessary to develop 1 horse-power would be:

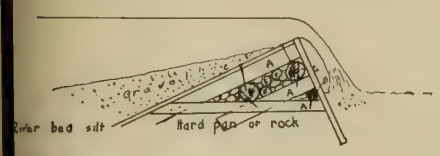
33,000 divided by 600 = 55 feet. As 35 feet is the highest head mentioned, the possible power from 12 cubic feet per minute would be

$$\frac{35}{55} = \frac{7}{11} \text{ H. P.}$$

With 15 cubic feet it would be almost exactly ¾ H. P.

In cases where there is water enough, a plant may be built somewhat as shown in Figure 1. Note the stream, across which a dam has been constructed. Tapping the stream above the dam is a race, the water in which is controlled by a headgate at the stream. The race leads to a flume built on an abutment in the face of a bank, and from the flume a penstock drops down to the turbine wheel below. From the flume there is an overflow into the river, and from the wheel a tail race also into the river. In case an overshot wheel were to be used it would be set below the flume, where the penstock is, the flume being continued out over the wheel so as to discharge the water at the proper point on it.

Figure 2 shows a cross-section of a dam suitable for the installation.—W. H. Day.



RAIN WATER AND FORCE PUMP

C. G., Alberta.—I am enclosing rough sketch of rain barrels on stand at back of kitchen. I wish to run water from barrel No. 4 into the kitchen. Stand is about 3 feet above kitchen floor. What is the best method of piping or joining barrels to accomplish this?

My well is 30 feet from kitchen and 28 feet deep. Could I have pump placed in kitchen to work satisfactorily and easy? If you consider this feasible what is best method and what kind of pump should I get?

Answer.—Run a pipe close under the barrels with a "T" connection at each, the ends of the "T" pipes being threaded back about 3 inches. Bore a hole in the bottom of each barrel the same size as the pipe. Procure two flange nuts for each pipe, screw one of the nuts well into each pipe, flange upward, then put the pipes through the holes in the bottoms and screw on the other nuts, flange downward. Then adjust the nuts the proper height and screw them tight. It may be well to use some packing between the nuts and the bottom, and white lead will also help to make a water-tight job.

If the ground is level so that the fall from the pump sucker to the level of the water in the well is not over about 25 ft. the plan will work well. Any pump of good quality will be quite satisfactory.

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RURAL MAIL

SOLDIER WANTS FARM

J. C., Ontario.—I hope to get a farm in Ontario through that proposed part of the "Soldier Settlement Act" described by Mr. Black in your issue of Jan. 15, 1919, and wondered if you could give me any information which would help me to locate to the best advantage.

Mixed farming is my ambition and I would like a 100-acre farm, but I have not to hand information which would help me to locate a farm of 100 acres suitable to mixed farming the value of which is limited to $5,000, so if you can I will be thankful if you will give me the average value of 100-acre farms in the different counties of the province?

Answer.—It is impossible to give valuations by counties, unless you accept the valuations of the Municipal Statistics branch, Agricultural Department, Toronto, Ont. If you write for the bulletin on municipal statistics you will have some idea.

But in almost every one of the older counties, away from the cities or back a short distance from leading roads, where the site value adds to the valuation, you will be able to get farms improved, with fair buildings on them, for $50 to $60 an acre. If I were you I would locate on one of such places rather than in other places. Then grow gradually into the life of the community. Almost all Ontario is suitable to mixed farming. Ask the Government or the Soldiers' Settlement Commission to give you location of farms for sale. Anything further I can do for you will be cheerfully done. Why not write some District Representative in Wellington, Peel, Oxford, Ontario or other counties for possible locations? You can get their names from Mr. Duncan, Dept. of Agriculture, Toronto.

TESTING FOR WATER

B. A., Sask.—Where can I purchase a good machine for testing for water? I want to dig a well to be sure of lots of water.

Answer.—Do not know of any machine for sale. There has been a recent invention, but am not aware whether it is in use commercially. That the principle is feasible seems plain enough. The old divining rod has not always been reliable.

WANTS MECHANICAL EDUCATION

W. C., Ontario.—Where can I get some mechanical education or get a job as traveling agent for tractors, etc.?

Answer.—Write to the various tractor firms stating your situation and if they can admit you as an operator you will hear from them.

GOOD SEED CORN

H. C. C., Ontario.—We have several hundred bushels of 1st class seed corn (Longfellow eight rowed yellow and Salzers North Dakota), all husked and under cover before the frosts came. We sent samples to seed houses before Christmas. They quoted their price $3.50 and $3.75 for white, but owing to sickness was unable to let it go at the time. When I next inquired was informed the yellow had dropped to $2.25 and the white they didn't want. Could you inform me of some company or person that could handle it on a commission?

Answer.—Have you made a germination test? Why not get one and then advertise for seed corn? Or you might try the United Farmers' Co-operative Co., 130 King St. E., Toronto.

SOLDIERS WANT BEE PAPER

W. W. C., Ontario.—Where can I get a Canadian paper dealing with bees?

Answer.—Canada does not publish an exclusive bee journal, but the Horticulturist Pub. Co. of Peterboro combines some bee topics in one of its issues. Write for it. Also get the literature put out by F. W. Sladen, Dept. of Agriculture, Ottawa, and by Morley Pettit, Apiarist, Parliament Bldgs., Toronto.—Editor.

SOLDIER WANTS INFORMATION

W. C. L., Ontario.—Do you publish a catalogue of agricultural and livestock books? Also could you inform me as to whether or no you consider rabbit and guinea pig raising a profitable sideline and if so could you inform me as to where I could obtain full information as to their care, etc.?

Also do you consider concrete blocks serviceable for piggery, hen house, silo and dairy barn, also horse barn?

Might say I'm an invalided officer and must find something outdoor, such as raising or breeding farm animals. Might say I am getting considerable advice from FARMERS' MAGAZINE?

Answer.—See elsewhere answers to inquiries for books. Would not consider rabbit and guinea pig raising, except as a sideline, a paying investment. Write to Department of Agriculture, Washington, D.C., asking if they have a pamphlet on this subject. Concrete blocks are good for any building in Canada. The hollow blocks are best.

BOOKS ON GENERAL FARMING

T. M. G., Ontario.—Where can I get some good books dealing with general farming, more especially the Handbook of Husbandry?

Answer.—The MacLean Pub. Co., publishers of the FARMERS' MAGAZINE, sell Making the Farm Pay. It is good. A Handbook of Husbandry can be had at most bookstores or write to the Macmillan Book Co., Toronto. The Wm. Rennie Co., King St. E., Toronto, handle Wm. Rennie's book on Agriculture That Is Good.

SHORT COURSES IN ONTARIO

J. A. H., Ontario.—Would you advise as to the short courses in farm engineering, given at Guelph? Are there any short courses given anywhere else in Ontario?

Answer.—The course at Guelph is held from January 28th to February 8th. Various courses are held by District Representatives in various parts of Ontario. Write to Geo. A. Putnam, Parliament Buildings, Toronto, for list.

THE FROST GIRL

C. H. Foster, box 92, Kerrwood, Ont., writes that he can supply E. H. H., Manitoba, with copies of FARMERS', containing the story of The Frost Girl.

TROUBLE WITH MAGNETO

E. S., Ontario.—I have a Maxwell car which has never had any power or pep, which I lay to the magneto, although I may be wrong. The magnets have been taken off and I think they have been put back wrong. There are two magnets on this magneto, which is a Simms Huff, and on these two magnets S. P. is stamped, which I take means South Pole. Now should both S.P. be on the same side of magneto or should one be on one side and the other on the opposite side of magneto? I notice on this car that there is a certain amount of play of the valve stems. Would a little play of these stems cause loss of power; if so, how much? The dimmer on this car will not work and I cannot dim my lights. What is the cause?

Answer.—The letters "S.P." on one side of each magnet indicate "South Pole" and they should both be on the same side of the magneto, otherwise if one South Pole was on one side and one on the other, the magnetic field set up would be neutralized, and hence a very

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"Eleven years ago I was in a hospital for seven weeks, at a cost of over two hundred dollars," says Mr. Willson, the well-known hydraulic engineer. "For two years I suffered torments, and winter before last I was laid up six weeks under doctor's care. Truly in the last twelve years I have wanted to die. I was in such agony. I would say, 'good Lord, take me,' rather than go through it again.

"But now I am a new man. I am a better man to-day than I was twelve years ago. I can almost put my leg over the back of my head. I could do that at 30, now I am 72."

Mr. Willson is only one of thousands who suffered for years, owing to the general belief in the old, false theory, that "Uric Acid" causes rheumatism. This erroneous belief induced him and legions of unfortunate men and women to take wrong treatments. You might just as well attempt to put out a fire with oil as to try and get rid of your rheumatism, neuritis and like complaints, by taking treatment supposed to drive Uric Acid out of your blood and body. Many physicians now know that Uric Acid never did and never will cause rheumatism; that it is a natural and necessary constituent of the blood; that it is found in every new-born babe, and without it we cannot live.

It took Mr. Willson twelve years to find out this truth. He learned how to get rid of the true cause of his rheumatism, and recover his strength and endurance from "The Inner Mysteries," a remarkable book now being distributed free by an authority who devoted over twenty years to the scientific study of this malady. And Mr. Willson says: "Now I know, and I never can forget—the carrier left it in my box and I came near throwing it in the fire. But something prompted me to look it over. Thank God I did."

NOTE: If any reader of Farmers' Magazine wishes the book that reveals these facts regarding the true cause and cure of rheumatism that were overlooked by doctors and scientists for centuries past, simply send a post card or letter to the author below, and it will be sent by return mail without any charge whatever. Send now! Cut out this notice lest you forget! If not a sufferer yourself, hand this good news to some afflicted friend. The author of this remarkable book that has brought relief and happiness to so many is H. P. Clearwater, Hallowell, Maine, No. 570 B Street.

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W. F. YOUNG, P. D. F., 482 Lymans Bldg., Montreal, Can.

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weak spark would be the result. If these two South Poles are on opposite sides of the magneto they should at once be removed and properly recharged and replaced with both South Poles on one side.

Any play in the valve stems certainly will cause loss of power.

FROST IN CELLAR

R. B., Ontario.—Will you please let me know through the FARMERS' MAGAZINE *if there is any difference between limestone and sand stone with frost penetrating it. Cellar is 8 feet, thickness 27 inches. 3 feet above ground cistern freezes and I would like to know the cause of it?*

Answer.—Where cistern wall is in direct contact with outside atmosphere, it is almost impossible to prevent freezing. Either protect with an air space or bank with sawdust or straw.

SPEEDER ON R. R.

U. K., Ontario.—Where can I get a speeder to run on railroad tracks and how do I go about it to get a permit to run on the M. C. R.?

Answer.—Write to the Superintendent of the railroad for your information. Permits for this purpose are not given to any but railroad men and government officials, I should judge.

DUCK EGGS

W. R. P., Edward Island.—Where can I get duck eggs of the large breeds?

Answer.—Write to your local department of agriculture for list of breeders in your province as it would be too far to ship from the East unless in large lots. Can supply you names if an addressed envelope is sent.

ENGINE TROUBLES

J. H. W., Ontario.—1.—I have a 3 horse-power kerosene engine and have some difficulty with it running on kerosene. It seems to be missing an odd time and quite a bit of white smoke goes off in the exhaust. The air is warmed before it goes in the mixture. The spark is all right. And there is a certain amount of water mixed in the kerosene before it enters the cylinder. Also the kerosene is number one grade. The engine works fine on gasoline. What is the cause of the white smoke from the exhaust?

2.—I am thinking of making a little tractor out of the same engine. The engine is 3 horsepower, how much will it draw? Will it draw a small plow?

3.—Could you tell me where the Neverslip farm tractor is made. You may have seen it at the Cobourg Tractor Demonstration?

Answer.—1.—The white smoke indicates too rich a mixture of fuel. Black smoke indicates too much lubricating oil. It is probable that your carburetor is not adjusted properly for kerosene since it runs all right on gasoline. Why are you talking about water in your kerosene? Water plays havoc with fuels.

2.—A 3-horsepower engine would be no use for this. Only a waste of time to bother with it.

3.—The Neverslip farm tractor is made in Brantford.

AN INVENTION

C. A. A., Ontario.—I have an invention on an improvement to add to a farm implement which is commonly used.

I want to know if it would be best to make a model of that part of the machine, showing the improvement, or if I could go direct to the manufacturer and sell the idea without getting it patented?

Answer.—You had better patent your invention at once if you want to protect it. Inventors have the misfortune generally to get little returns from submitting it to manufacturers.

HAY WANTED

F. E. D., Ontario.—Where can I get a carload of pressed hay?

Answer.—Write to J. A. Peer & Son, 14 Commercial St., Toronto.

LIVE DEER WANTED

J. J. H., Ontario.—I write to ask you if you know where I can buy a pair of live deer?

Answer.—Perhaps some reader can answer this question. Write the Park Commissioner, City Hall, Toronto. He may have some for sale.

BOOKS ON FARMING

W. G. C., Ontario.—Can you furnish me with a more complete list of books on farming than the ones you advertise?

Answer.—Write to Parliament Buildings, Toronto, for list of books on agriculture, Bulletin 29. A summary of this appears in the FARMERS' MAGAZINE reference number on Feb. 15.

MAN AND WIFE WANTED

E. W. B.—Where can I get a man and his wife to come to Alberta to work on a farm?

Answer.—There ought to be plenty of help this spring. Write to Jas. A. Miller, Ontario Employment Bureau, King St. West, Toronto.

SMOKER FOR ANIMALS

Will you please inform me where I can purchase an article called a smoker for smoking animals out of their dens, or holes? I like to trap and hunt.

Answer.—Your question was answered in the Fur article in the Jan. 1st issue. These are for sale at all the fur houses. John Hallam & Co. of Toronto sell them.

NEW BARN

F. A., Sask.—As I am thinking of building a new barn next spring, the size of it to be about 38 x 90, I would be much obliged if you would furnish me with some of your plans.

Answer.—Have asked some barn firms here to mail you their plans, which are quite good. We have not gathered our plans together into mailing shape. Joe Wing's book on Barn Plans is a mighty good one to have, we sell it for $1.25. See next issues for a few plans published in the magazine also.

LEECHES IN A DRILLED WELL

J. O., Ontario.—Some people I know have leeches in their drilled wells on the farm and I would like to know how to get rid of them.

Answer.—We never heard of this trouble before. Could you give any more particulars?

WHITE TURKEYS AND GEESE

J. W. K., Sask.—Let me know where I can get white turkeys or geese in Western Canada especially?

Answer.—Perhaps some readers of FARMERS' MAGAZINE can insert a short liner ad. in the magazine, telling of their poultry for sale. Many are inquiring. I am sending you a private letter giving you your information.

MANURE SPREADER PARTS

A. S. M., Nova Scotia.—Where can I get the parts of the Success manure spreader?

Answer.—Kemp and Burpee, Syracuse, New York, are the makers. Write them and see if they have agents in your province.

CALF'S NAVEL DISCHARGES

A. J. H. Ontario.—A bull calf dropped last spring. Swells up at the navel, discharges pus and then seemingly heals up. It has just healed up for the third time. The calf is sucking the cow yet, but is only in fair condition. Would the flesh be fit for human food?

Answer.—Your calf's trouble is likely an abscess of the navel caused by some local irritation of calving time and inflammation has set in. If there are no swellings or inflammation of the veins and urachus forward and backward along the lines of these canals, the treatment will consist in an early opening of the abscess by a free incision, and the injection twice a day of an astringent antiseptic such as chloride or zinc, one-half dram in a pint of water.

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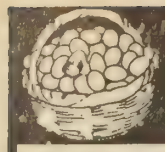

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POULTRY

Increasing the Chicken Crop

By M. A. JULL

PRESENT indications point to an extensive development of the poultry industry throughout the entire country, in order to meet the increased demands for poultry, meat and eggs. The consumption of these commodities has increased very considerably during the past four years, and eggs particularly have been subjected to the acid test because of the price to which they attained. Nevertheless, the price of eggs has been in keeping with the price of the staple animal meats, and since strictly fresh eggs have been in such keen demand there is bound to result a further development along egg production lines. Of all foods eggs are the most palatable, easily digested and readily assimilated. They have proven their worth to invalids and convalescent soldiers. Since the price of eggs still remains good and there is every prospect of grain prices decreasing gradually, the future prospects of the poultry industry are bright.

Farmers will find it to their advantage to improve the quality of their flocks and at the same time to give much attention to details of management. To a certain extent fowls are of value in proportion to their ability to produce eggs. The basis of comparison in egg production should be not only on the total number of eggs produced but also on the time of production. Ten eggs laid in December or January are worth about twenty laid in April or May. Most of the farm flocks produce eggs from March to June, which is the season of low profits. The average farmer should endeavor by all means to increase his winter egg crop. In order to accomplish this one of the most important things is to hatch the chicks in plenty of time to have them fully matured for fall and winter egg production.

Breeding For Egg Production

The ability to lay eggs is inherited and it requires careful and consistent selection to improve production. The best layers are those with bright, full eyes; combs of medium texture; bodies of good size, good width between the pelvic bones, this test being applied at different times, and a soft, velvety feeling of the skin of the abdomen as the hand is placed between the end of the keel bone and the pelvic bones. In those breeds—Plymouth Rocks, Rhode Island Reds and Wyandottes— which normally have yellow pigment in the shanks the color becomes much paler after a heavy laying period. Good layers show no evidence of being lazy. They usually moult late in the season.

The birds which begin laying early in life usually make the best annual layers. Production in the pullet year is nearly always greater than in subsequent years, consequently the majority of the flock should consist of pullets. A number of yearling birds should be kept as breeders.

Mate the breeders, selected from the pullets which laid the best during the previous winter, with a male whose mother was a heavy winter layer. The selection of the male is very important for the sire has more influence in the production of heavy laying pullets than has the dam and it is only by using a male bred from a good winter layer that best results can be secured.

Aside from the improvement resulting from better methods of breeding, better methods of management will also give much larger production.

Eggs For Incubation

The breeding stock is the foundation of success in hatching and rearing chickens; great care should be exercised in the selection of vigorous breeders of a good winter laying strain.

It is very important that the chicks be hatched as early as possible. Above all do not hatch late in the season. Since winter egg-production is the most profitable branch of the poultry industry and since the average general purpose chicken does not commence laying before about six months after being hatched, it is obvious that hatching should be done six months prior to November, when pullets should commence to lay. Late hatched pullets are rarely profitable. General purpose chickens should be hatched before the middle of May; Leghorns should be hatched before the first of June.

Mate one male with from ten to fifteen females. About ten days should be allowed from the time the male bird is placed in the breeding pen before eggs for hatching are selected. At the end of the breeding season a good proportion of fertile eggs may be expected up to about seven days after the male bird has been removed from the breeding pen.

Eggs for incubation should be selected with care. The number of chickens reared to maturity in proportion to the number of eggs incubated is the best possible criterion of one's ability as a poultry raiser. Under average conditions it takes about four eggs to produce a mature chick, therefore it takes about eight eggs to produce a mature pullet.

Good chicks can be produced from good eggs only; they should each weigh about two ounces, have a smooth surface and be oval in shape. Do not in-

AT THE END OF A PRODUCTIVE SEASON
A Rhode Island Red hen beginning to molt. She is at the end of her "pullet year," in which she laid 142 eggs, fully twice the average for all hens in the United States and Canada. Her feed consumption in this time is shown in the photograph, which was made by the Bureau of Animal Industry on its farm at Beltsville, Md.

cubate small, dirty or washed eggs, nor unevenly shaped eggs, nor eggs with cracked shells. The sooner the eggs are incubated after being laid the better, but they may be held for seven days, during which time they should be kept in a temperature of from 50 to 60 degrees F. and they should be turned occasionally.

A popular question among those who raise chickens is, which is the best, the hen or the incubator? This question cannot be answered without qualifications. It is my personal opinion that under given conditions chicks hatched under and reared by hens are usually more vigorous than chicks hatched in incubators and reared by brooders. Nevertheless, there are many poultry plants where hens are never used for incubation purposes, but where the results in chick rearing are apparently entirely satisfactory and constitutional vigor has been maintained from generation to generation. I think the problem may be stated thus:—Where one is in a position to give the required time and attention to a few hens with their limited number of chicks, then best results may be secured. On the other hand, where chicks are raised commercially the use of the hen is out of the question.

Natural Incubation

Boxes eighteen inches square and eight inches high make good nesting boxes. The nests should be built carefully, preferably with earth in the bottom, having the corners well filled, covered with soft straw or leaves. If the nests are too deep the eggs may pile up and break; if they are too shallow the eggs may roll out. The nests should be placed in a secluded place and the hens should be set after dark. Set a number of hens at the same time, if possible, and where several are sitting in the same room it is well to have the nests covered so that each hen will be confined to her own nest.

The hens should be dusted thoroughly at the time of setting and again just before the chicks hatch; take each hen by the feet, holding the head downwards, and sprinkle lice powder into the feathers and then rub it all around the joints.

Feed the hens on a variety of hard grains and keep clean water before them always.

Artificial Incubation

Disinfect the incubator before and after every hatch, using a hot ten per cent. solution of good disinfectant.

Use a well-made, double-cased machine and place it in a fairly cool room, which is well ventilated but free from draughts. Be sure that the machine is set level and run it for a few days to adjust the regulator. Use a reliable thermometer; it can be tested by a druggist. Maintain an even temperature of 103 degrees on a level with the tops of the eggs as they lie upon the trays. The lamp should be filled with oil every morning, after the eggs have been turned, and great care should be taken in trimming rounded corners on the wick, in order to give a broad even flame. Turning the eggs, twice daily, should begin on the third day and continue until the eighteenth day. While the eggs are being turned they may also be cooled, the length of time for cooling extending from two or three minutes on the third day to ten or fifteen minutes on the eighteenth day. The ventilators of the incubator should be kept closed until the ninth day, when they are opened a little at a time until on the twenty-first day they are wide open. It is always best to supply moisture to the machine; beneath the egg-tray keep a pan, nearly the full size of the incubator, filled about one inch deep with water or with sand and water. Test the eggs on the seventh day to remove the infertile ones, and on the fifteenth day to remove the dead germs. While the chicks are hatching keep the egg chamber dark by hanging a cloth or paper over the door and keep the chicks up on the tray. The chicks should be kept in the incubator for a few hours after being hatched, and if they pant the door should be opened a little to provide ventilation.

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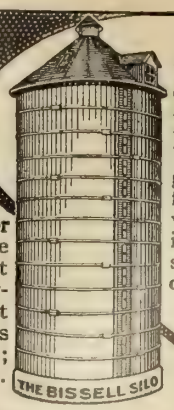

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FARM BUILDINGS

Talks About Barns

THE ideal location for the barn, said the late Joe Wing, should be as nearly as possible in the centre of the farm. The dwelling of course should be near. The advantage of having as many pastures and fields directly connecting with the barns is obvious. Time, distance, labor, all are saved, and oversight at all seasons, of the stock made more convenient. The character of the site, however, is of still greater importance, and perhaps there is nothing worse than a low, flat, undrained barnyard and adjacent lots. Strange to say, however, nothing is more common.

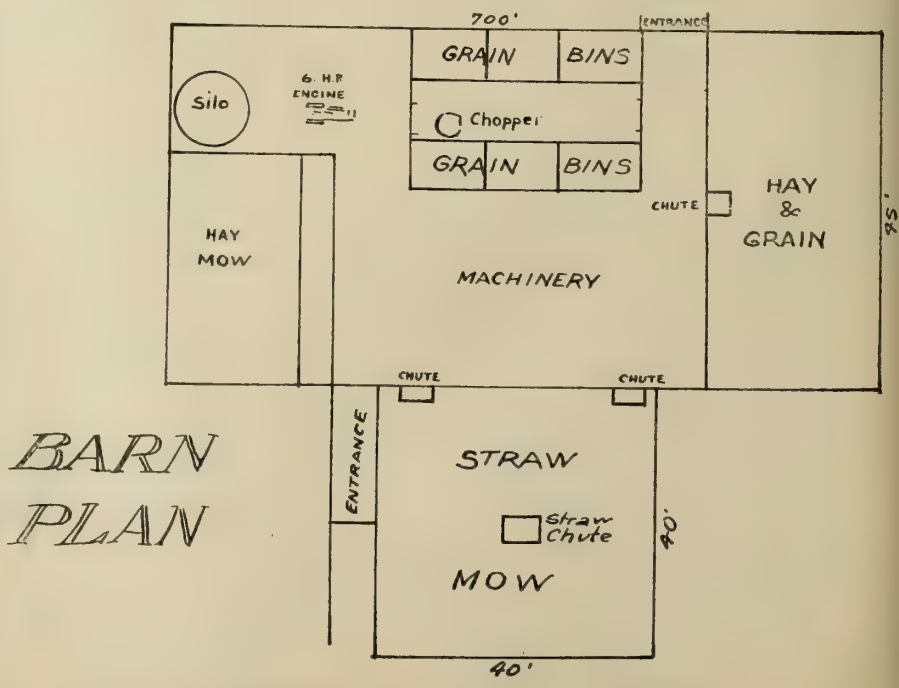
If such a location is unavoidable then it will pay to use all the resources of drainage, tile and stone, till even the longest wet spell loses its terrors and planks and rails no longer are needed as bridges to cross the depths and reach the barn door. Wet, and not cold, is the greatest enemy to thrift and flesh, and the floors of all sheds and pens should be high, dry and well drained. The importance of a sufficient number of well fenced, conveniently arranged lots of sizes from a hundred or so square feet up to an acre or two should not be overlooked. There are never too many. There is an infinite variety of wants met by an infinite variety of circumstances, mental peculiarities and financial conditions, resulting in a corresponding variety of farm buildings.

Leading Points to Remember

Good air, good light and dryness are foremost in importance; they go together. One of these qualities lacking, the others are almost sure to be absent. The dark, cavernous recesses of very large barns are seldom ventilated or dry. The heavy foundations imply a basement dark, damp and malodorous. The great roof and floors mean heavy timbers, much skilled labor and expense, and last but not least is the chance that some winter night, in red and yellow flame skyward soaring, the huge structure vanishes with all the horrors of agonizing death to helpless animals and to the owner loss immeasurable. More desirable are two or more smaller buildings, all above ground, on light foundations, light timbers with but little framing and far enough apart for some degree of safety from fire and a chance to save life. There should be doors on every side and ample windows. Nothing is so cheap as sunlight and yet nothing is so scarce in the average barn or stable. Another great advantage of somewhat scattered and smaller buildings is the possibility of dividing up the stock and obtaining direct access from different lots and pastures for different classes of stock. It is not uncommon to see in the middle of the night, in a large barn, a hundred cattle aroused and disturbed by one uneasy heifer or lost calf. Plank flooring is to be avoided if possible. It is unsanitary. Broken stone (8 in.) with here and there a 3 in. tile running to the outside with 6 in. of porous, yellow clay on top, wetted and tamped, hardening like a brick, will always be dry, never slippery, needs only here and there after the winter is over a little fresh clay and affords no harbor for rats. Many breeders prefer cement floors, which are in common use. Have no narrow, contracted passageways in which the larger cattle will crowd and jam together. A favorite arrangement seems to be a narrow feeding alley, two rows of cattle, heads in, and two narrow passageways behind the cattle. This is a misuse of space, more expensive and no more convenient. Far better have one wide space, not less than 10 ft., which is less than the 3 in. in the centre, in which the cattle have ample room to walk quietly to their stalls, where they stand heads to the wall. A hand-cart may be used to distribute the feed (before the cattle come in at night) and every animal always has the same stall. A noted cattle breeder is quoted as saying that time and again he has seen 70 head of cows walk into such a stable from three entrances and be tied up by two men and munching their feed in 20 minutes, with neither noise, hurry nor confusion.

Every barn should have a mow sufficient at least to supply its inmates with the winter's hay, bins for bran and prepared feed. In latitudes where the mercury only now and then falls below zero animals suffer more from the barn being too warm and close than from cold. In fact but for the difficulty of properly apportioning feed, so far as health is concerned, a good, deep shed, say 20 ft. from front to rear, with a hay-rack and plenty of bedding is better than a barn; the air is pure; there are no draughts and no over-heating and no chilling. Health and vitality are in direct proportion to pure air and well bedded is half fed.

No matter how perfect the barn may be nothing can take the place of abundant bedding, and convenience in getting it in and getting it out (in the shape of manure) easily and rapidly is a thing indispensable. As a rule the manure should go direct from the stalls to the pastures and fields.



Floor outline for a barn with place for implements.

THE HOG AND CATTLE SITUATION

By P. A. Crane

THE Canadian hog situation is of chief concern to the farmer and meat packer at the present time. The market is very much unsettled, and contrary to expectations and assertions of leading "lights" in the industry a few weeks ago, prices have dropped to low levels, not reached at any time during 1918. The lack of export demand is of course responsible for the slump. The holding of the market at high figures is absolutely dependent on overseas requirements. The withdrawal of the Allied Buying Commission from the Canadian market has worked havoc in the hog trade, and until some solution is reached, whereby Old Country interests are again liberal purchasers, the Canadian farmer is going to receive a much lower figure for his swine. It is stated that Great Britain is just now over-supplied with pork products, but it is further pointed out that much of the pork now in the Old Country consists of "cuts" the people do not readily buy, nor particularly care for. Therefore, if Great Britain could arrange to sell these meats in Europe, where they would be more acceptable, Great Britain would again be a buyer in Canada. A conference of leading packers was held recently at Ottawa with the Minister of Finance and the Minister of Agriculture when the situation was thoroughly reviewed. The Government promised every assistance towards the furtherance of the interests of the industry. Every effort is being put forth to create new business in Europe, but a revival in the Canadian markets is solely dependent on the action of the Allied Buying Commission in extending further orders.

While there is no doubt that Europe is badly in need of supplies at the present time, the question of financing the purchasers is not yet solved. The countries of the Allies are without the necessary funds to supply their needs and until they are in a position to negotiate sufficient loans to "carry on" they are not in the markets. It is learned, however, that Food Controller Hoover of the United States has been able to secure large orders for American firms, and possibly Canada has been lacking in foresight by not also having a representative in Europe in the interests of the Canadian industry. As a result of these orders, American packers are able to guarantee the farmer $17.50 per hundred-weight for his hogs. According to the statement of the manager of one of Canada's leading packing concerns, the situation is one that will right itself within several weeks. He believed the farmers would be wise to withhold their hogs for the time being. Undoubtedly, he asserts, the time is coming when prices will be gradually lowered, but hogs will still be profitable for some years yet. He urged the farmer not to rush their hogs in, when the packers couldn't handle them. The market for Canadian bacon is in England alone, there being very little outlet in Europe for the Canadian bacon hog. American bacon is produced from the fat hog, which the rest of Europe wants. The best plan is for Canada to keep on trading with England, and let the United States have Europe. The contracts, of course, should have gone on, and the cancellation of the same has been somewhat of an injustice.

Offerings of hogs on the various Canadian markets have been moderately heavy during the month of January, but towards the end of this period, farmers showed a disposition to retain their hogs until the situation is more definite, one way or another.

CALVES MUST GROW

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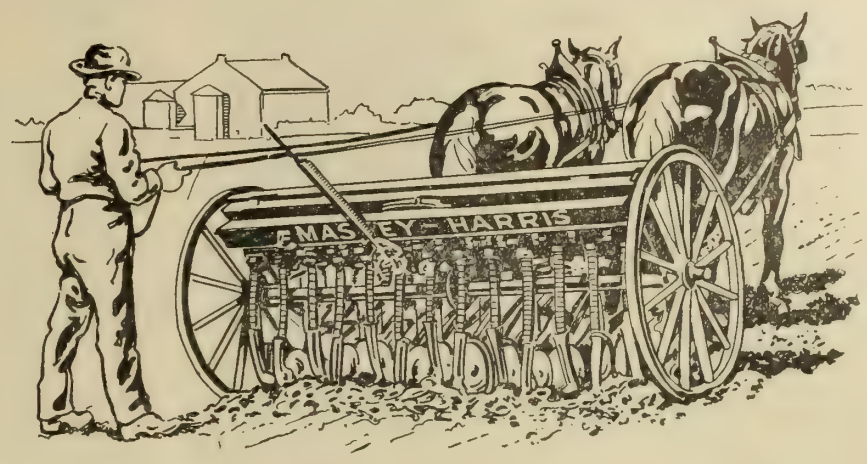

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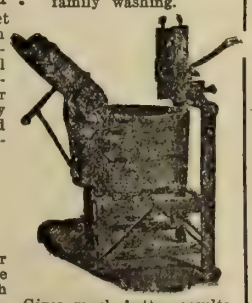

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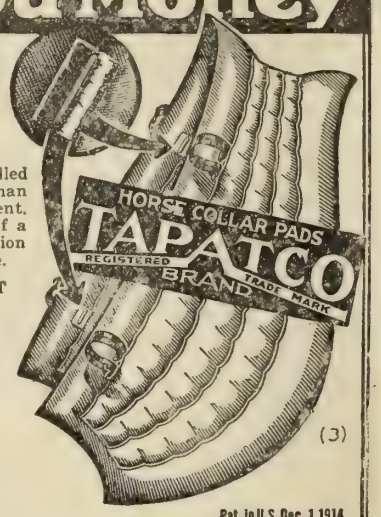

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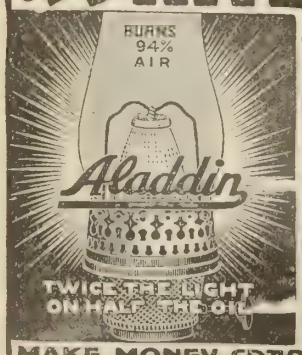

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DAIRYING

The Discontented Dairyman

By W. H. UNDERWOOD

I HAVE in mind a dairyman who is not quite satisfied with his farm. It does not please him in its topography. There is a lack of water in some parts and the buildings on the place were never intended for strictly dairy purposes. He is constantly thinking of what the place lacks to make it a perfect dairy farm and he is continually on the lookout for a dairyman's paradise. This man fails to see that he already owns as good a farm for dairying as there is in his region, that the water supply so far as it goes is as good as the water system in any part of the country, and he has a good market right at his door for the products of his dairy and farm. He is in the midst of the very best schools, churches and everything else that is good.

This man has a chance to trade his farm for a much larger one if he will only furnish enough money to make up the difference. The larger farm is away off from any market and has been neglected to the extent that a great deal of work and money will be required to put it into shape to bring profitable returns. This dairyman is so busy in lamenting the few shortcomings of his present farm that he has no thought for the improvement of existing conditions. In fact he looks upon his farm as a mere stopping place and does not want to improve it for some other fellow. This spirit is doing much to cut out some of the profits of dairying and some of the pleasures of achievement. The barn on this man's farm could be made a whole lot better at a trifling expense. The less fertile fields, with proper management, could be made to yield better crops and in a very few years the old farm would begin to look like a real home and the desire to sell would lessen, as the returns would continually increase.

It is the man who continues to do business at the old stand who really makes the greatest success of his work, provided he is really interested in it and keeps up with the times in its management. The man who quits his job just as the people are talking about his proficiency will never make a success at anything. After all it is a very narrow plan to slight work in the hopes of getting into a different place or a different job soon, as it sometimes happens that a chance to change never presents itself.

I am acquainted with a dairyman who complains that his farm is not large enough to support his present herd of cows and that he will have to buy more land. There are plenty of farms no larger than his that are keeping four times as many cows as he is, and keeping them as they should be kept too. The smaller the farm the farther the manure will go, and it is the manure after all that is a great factor in the productivity of the soil. A great quantity of silage can be grown from a very few acres of ground if the soil has been liberally fertilized with manure and the same ground can be used for the production of silage corn for several years in succession.

Likewise manure has a wonderful effect on the growth of alfalfa and other protein bearing plants, which do wonders either in the production of milk or in the growth of young stock. Few people know the great possibilities of a farm, but progressive dairymen are studying the subject and are proving that a small farm well tilled is in every sense the most profitable one and that it makes the most satisfactory home.

An old story seems worth repeating in this connection. A discontented farmer after buying and selling several times was approached by a land agent, who described a paradise of a farm that was bound to please any man. Arrangements were made to go with the agent and investigate. The discontented farmer was surprised to find upon approaching the farm that he had left this place only a few years before and that the agent had truthfully described it. It had been farmed recently by the right man, one who had made "the desert to rejoice and blossom as the rose."

HOLDING THE MILK

By Wm. Wood

COWS will sometimes refuse to "give down" their milk, especially to a strange milker, and a rough milker will often upset a herd. The remedy in these cases is to get rid of the offending milker, for among dairy cows gentleness and kindness should always rule. If a cow evinces a dislike for one milker or a preference for another it is best to humor her and hand her over to the care of the favored individual entirely.

When a cow persists in holding her milk a common remedy is to divert her attention from the operation of milking by providing some tempting food. The question of feeding at milking time is a debatable one and there are arguments against it, but nothing makes cows so much at home in the dairy barn or brings them to it so cheerfully as some wholesome food. As a general rule the relationship between the cow and the milker is good in dairies where feeding at milking time is well established.

In some cases with a strange cow patience wins, and if the milker sticks to his stool and keeps rubbing the udder and stroking the teats he will tire out the most willful of cows. In other cases it seems a better plan to leave the cow for a time and return to her half an hour later. In extreme cases it may be found more effective to refrain from milking until the distension of the udder begins to cause inconvenience, but there are some drawbacks to this plan and if it is carried too far there may be a case of garget or a bad quarter.

A favorite remedy with some is putting a weight over the loins and I have seen heavy chains and bags of grain or earth employed in this way. The idea is that the weight on the loins has an effect on the ability of the cow to control the voluntary muscles of the udder which under normal conditions no doubt she can do, but such measures are calculated to upset a nervous cow and can never conduce to a big yield of milk.

It is well to bear in mind that the udder is not simply a reservoir for storing milk which can be emptied by overcoming the resistance of the cow. Secretion goes on while milking is in progress and is favored by the gentle stimulus of the hand of the good milker or the tongue and palate of the calf. There is no doubt but that kindness, patience and perseverance are the most successful means to employ in overcoming a disposition to "hold the milk."

CANADA'S BUTTER EXPORTS

In 1916 Canada exported 7,713,265 pounds of butter, valued at $2,377,740, in 1917, 4,008,186 pounds, valued at $1,572,438, and in 1918, 9,731,500 pounds valued at $4,274,606, as shown by a summary of Canadian trade during the last three years, compiled by the Dominion Bureau of Statistics, from data of the Department of Trade and Commerce.

FUR FARMING

Spring Trapping *and* Skinning

By ROBERT HODGSON

WITH the first part of March comes muskrat trapping in all parts of Ontario south of the French and Mattawa Rivers and the muskrats are then in their prime, in fact at no other season of the year are they so good and they will remain so until the latter part of April. With present high prices and this the muskrat's running season, being the easiest time to catch them, there is no reason why the amateur trapper cannot add quite a few dollars to his bank account by the first of May.

Of course this is the running season of most other fur-bearers as well, but such animals as mink, skunk, raccoon and such land animals have begun to "shed" their winter coats. They turn blue on the pelt side and it does not pay to set traps for them; if however one happens to be caught in one of your muskrat traps why, alright—but to set traps especially for and endeavor to catch them now is not, as I stated, worth while.

The first thing to be considered in muskrat, or in fact any trapping, is the traps and there are several reliable makes now on the market which are cheap and will answer all purposes. It is best both from a humane standpoint as well as saving to the trapper to drown the animals as soon as captured, and thus keep the muskrats in the traps after once caught; this is far more difficult than capturing them in the first place. One of the methods commonly recommended is the sliding pole, but this is quite a bit of trouble, besides the fact that it cannot be used in all places, and a method I have found to give as good, if not better, results is to use the extension chain and fasten to ordinary trap chain so as to give the muskrat plenty of chance to reach deep water. Then take a stick and place it out in deep water, about a foot this side of where the trap would reach out, after being staked when extended to the full length of the chain. When caught, the muskrat, or in fact any animal, immediately makes for deep water and ninety-nine times out of a hundred will wind the chain around the stake out in deep water, and this will hold it there and it will drown.

During the spring months there is no use in using bait such as apples, etc., for muskrat as they will pay but little attention to it—a decoy, however, is very attractive to them and will add many rats to your trap if it is a good decoy. I will tell you of a scent that is very attractive to muskrat at this time of the year which will yield you many additional pelts.

Between the hind legs and under the skin, you have doubtless often noticed two small sacks which are most conspicuous on the male and in the spring months contain about two dozen drops of a sickening, sweet, yellowish white fluid. This is what is termed muskrat musk and is used a good deal in making scents for fur-bearing animals—the best ones at least. Be careful and not puncture sacks with your knife, but have a wide-mouth bottle you carry with you of about six ounce capacity and in this have about two ounces of alcohol or whisky. As you skin your muskrat cut off the scent glands at the top and carefully squeeze the musk into a small bottle, then place the musk sacks in the large bottle, let stand for a week, shaking well and often, when you can strain off liquid in with the clear musk. About six musk sacks and contents from some will make about four ounces of good decoy when prepared in manner stated, using alcohol or whisky to dilute to this amount. You will find this an excellent decoy for muskrat and they will come long distances and go much out of their road to locate it.

In my other writings I have tried to convince the trappers of the necessity of taking care of their furs and preparing them for the market in the best possible shape and condition. More money is made through this policy than is lost in having animals get out of your traps. The trapper can do much to see his furs are in the best of condition when ready for market and use care in skinning the animal so as not to cut the pelts. If a hide has been wet when caught the fur lays in bunches, and while it may not decrease the price it looks much better when the fur is dry and all standing up again as in the natural state. Shake all the water out of the pelt you can and then when dry rub your hand over it until it lays the natural way. Comb or brush out all hair, burrs or sand and scrape off superfluous flesh.

Skinning the Animal

In skinning use a good sharp knife and then it is unnecessary to press, in which case the skin is often punctured badly. One of the simplest methods of skinning the muskrat, and which I use myself, is to carry a piece of good strong belt string about eighteen inches in length and at one end make a split, say three-quarters of an inch long; now draw the string through this, forming a loop which will easily slip. When you secure your muskrat slip this loop over its tail and well down to the base, tie it to a limb so it hangs at right length for easy skinning and skin down one hind leg, across and up the other (you do not leave the feet on muskrat as you do in skinning mink, etc.) around the tail and get the hide free to down around his hips, when it will pull off from there to the front legs. Pull down over the front legs until the joints show well, then grasp the bared leg with one hand and the hide next to it with the other and pull the hide coming away from leg without any cutting. When both front legs are treated in like manner, pull the skin down until you come to ears, cut these as far back as you can readily and handily, then pull to eyes which you will notice are round blue lumps sticking up from flesh, cut them at top and pull skin completely off, as it is seldom necessary to cut at nose. The ears and eyes are usually the places where the amateur spoils the hide but if it is gone about in the manner stated above there will be no danger of this.

When you find a live muskrat in a trap (or as far as that goes any animal) do not pound it all over the body with a stick to kill it, as it not only bruises the hide, making it inflamed, but where they are hit on the head you cannot see where you are skinning and are more apt to make a mistake by cutting at the eyes or ears and make the hide worth less. Pick up a fairly heavy club and watching your chance give them a sound bat on the nose; this will usually be found to finish them.

Ofttimes in the spring, which is the muskrat's running season, you will find the hide badly lacerated from fighting with other animals. While this cannot be repaired to make it as good or worth as much as another good hide, it can be made to look much better and to sell for more than as though you had left the gaping cuts in it. Draw up the edges of the cut with a needle and thread, pressing the needle through plenty far enough back so that thread will not pull out. Draw it up so it is even or overlaps a trifle, and when the hide is dry cut and take out the stiches; push back with a knife blade, or some other such article, the hair that has been accidentally drawn out through the cut and shows on the pelt side, and you have the hide so the cuts are hardly noticeable.

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FRUIT GROWING

Trees' Fruiting Habits

By PROF. B. S. BROWN
In the "Journal of Heredity"

MANY varieties of apples and pears for various reasons bear only every other year. This condition is not uniform the country over, but is more common in the fruit sections of the North and East than in the South or West. The same is true but to a less extent of the stone fruits. The causes are somewhat varied but are mostly the result of the climatic environment in which the trees are grown. The biennial bearing habit is apparently not an inheritable trait, but when it once becomes fixed in the life of the individual there is little that can be done to change it.

In the fruit sections where the climatic conditions favor the setting of a crop every year, the biennial habit does not exist. In those sections where frosts and rains interfere with the set of fruit, the life processes of the tree are thrown out of balance and the tree gets into the habit of over-working one year and recuperating the next. A normal tree develops fruit buds for the next year at the same time it is maturing the present crop. When there is no fruit to mature, an over supply of fruit buds is prepared for the next year. When the time comes, if conditions are favorable, a heavy crop sets and the tree puts forth all its efforts to mature it. This causes such a heavy drain upon the energy of the tree, that no fruit buds are formed for the next crop. After a few years the habit generally becomes fixed and the tree continues as a biennial bearer.

If the trees are properly pruned and *the fruit thinned, while they are young the habit can be prevented to a large extent.* When a heavy crop sets on a young tree, it should be thinned enough so it will not be overburdened and can develop fruit buds while maturing the crop. If frost destroys the blossoms, then the grower should reduce the vigor of the trees by cropping the orchard or by giving less cultivation. A heavy pruning in the years when a crop is expected will tend to reduce the amount of fruit and increase the wood growth. Early summer pruning during the crop year will often stimulate fruit buds. As the trees grow older the habit becomes fixed and it is hardly worth while to attempt to correct it.

That a heavy crop actually reduces the number of blossoms formed for the next year can readily be proved by observing and counting those that appear through two or three years. Instances are not uncommon, where scarcely a dozen blossoms developed on trees that matured a heavy crop of fruit the preceding year. In one case, one-half of the tree had been grafted to a Gravenstein, while the other half was of the original variety. For some unaccountable reason each half of the tree chose opposite years for their heavy crop. In the spring it presents an odd appearance by one-half being in heavy bloom while the other half scarcely develops a single blossom. The next year the process is reversed.

This tree is now about 25 years old and to the writer's personal knowledge has behaved as described for the past five years. No certain explanation can be given. As there is some slight difference in the blooming time of the two halves, it is possible that frost may have come at such a time as to destroy the fruit on one side while the other escaped. It is interesting for two reasons: First that it indicates that the formation of fruit is not wholly a question of nutrition; second, that the food supply of the tree is directed first to the needs of the maturing crop.

Editor's Note.—This difference in the fruiting habits of trees is well known to all orchardists and its study is of some interest. The deductions given here do not seem to carry in the cases of Ben Davis and of some wild apples on my own farm. I have a Rhode Island Greening young tree that bears on one side one year and on the other side the next year. My yellow harvest tree bears only every other year religiously. Some Spies bear every other year. Any observations on orchard fruiting would be gladly received in these columns.

A Spitzenburg graft where arrow points, blooming, and tree not blooming.

PRUNING APPLE TREES

PRUNING now is not done the same as many did it 20 years ago. Today it is allowed that low-headed trees are most profitable—they are easier to prune, spray and pick. Some old orchards have the main branches destitute of bearing wood 12 or 15 feet from the ground. When trees have been pruned as described part of the top branches should be cut off, always cutting back to a lateral. Cutting back the head has a tendency to force out sprouts on the bare lower branches. There are some trees so high that it is next to impossible to spray or pick. There is no profit in growing apples that cannot be sprayed, and apples shaken off are almost without value.

Such high trees as those described should be lowered. Twenty-five feet is a high tree, rather lower is better. There are many trees in Ontario 35 feet high. Such high trees should not be lowered to 25 feet in one season. That would be a terrible shock to the tree and it might die. In pruning it really takes more time to determine what to cut off than to do the cutting. This suggestion to some may look like a waste of time, but it is not really so.

Look carefully round the tree and determine where there is a likely place to head back to. About five or six feet in one season would be lowering a tree very fast. The pruner should make up his mind when on the ground about where he means to cut back to, but after looking at the top of the tree he may find it necessary to cut slightly higher or lower because of the lateral branches not being exactly as he thought they were when on the ground.

First cut back the centre, then the outer branches to laterals corresponding in height to the centre. The centre of the tree should be highest, gradually sloping lower to the outer branches. In every case cut back to a lateral. After the lower branches have been filled out with new wood then those still high should be lowered more to the next lateral, several feet lower.

A Girl's Romance With Pots and Pans

Continued from page 16

he looked beyond that and believed in my possibilities. We had been engaged six month before I began to realize he was expecting as a matter of course that I should keep house for him. I resented this bitterly. I hated the prosaic, the practical. I wanted still to be my lover's little lady of dreams. Yet I had known when I promised to marry him that we must begin life in the simplest fashion, for Ted was only a bookkeeper in his uncle's warehouse. If we took an apartment we could not keep a maid, so I began to talk of boarding.

"Ted protested. 'It's just a makeshift. One doesn't really *live* in a boarding-house.'

"'If we keep house,' I said, 'I shall have to do my own work.'

"He looked puzzled. 'Why, I thought—if we could take a duckie little apartment, and have a woman do the hard part—that you'd be crazy about it.'

"'You can't expect me to be crazy about a life of—drudgery.'

"I saw the light which had been in his eyes flicker and go out, then he said, gently, 'Well, there's lots of time to think about it,' and changed the subject.

"But I was quite obstinately convinced that I was born for better things than broiling beefsteaks or baking bread. I began to feel a sense of grievance against Ted—that he should be willing to drag me down!

"I was brought to my senses, when, one hot morning, I motored with my father to the docks. He wanted to see Ted's uncle, so I went with him to the warehouse and looked for Ted. It was a gloomy, smelly old place, and Ted's little office was in a sort of cubby-hole at the back, facing, not the harbor, but the street. Outside, the heavily laden drays rumbled, and the horses' hoofs beat upon the cobble stones. The dust came through the open window, and in the midst of it all sat Ted in his shirt-sleeves, bending over a big book, making figures on the long white page.

"Talk about drudgery! I shall never hear the word without a vision of my lover at his task. From eight in the morning until six at night he was chained to his desk. He who had always loved his freedom as the wild things of the wood love it! But he had never complained. He had accepted his man's task as a matter of course, and I think he had expected that I would take up my woman's task in the same spirit.

"When I reached home I had a talk with mother, and then I went down into the kitchen and had a talk with Olga. I told her that I wanted to learn all that she could teach me. She was radiant, and the days that followed were busy ones.

"Well, I learned a lot in a few months, and one September day mother and father and Ted and I motored down to the shore for a picnic-lunch on the rocks. Everything that was packed in the lunch-basket was of my making—the rolls, the raspberry tarts, the mayonnaise, the frosted cake. I had roasted the chicken and had stuffed the eggs.

"At noon, with the blue sea booming below us, we ate and ate. When Ted praised Olga's cooking, mother smiled, and father's eyes twinkled. And at last, when everything had been sampled and pronounced perfect, I revealed my wonderful secret, 'It isn't Olga's cooking, but mine!'

"The light which had flickered out in his eyes came back, and he said, 'You!' as if it were the most wonderful thing in the whole wide world.

"And it was wonderful. For it taught me that I loved Ted enough to share life with him, and sharing a man's life means sharing his labor."

She is such a happy wife, this happy Miriam. She has a maid now, and Ted has a motor-car, and his office in the warehouse looks out over the harbor, but life will always be sweeter for Miriam and for Ted because they shared things in the beginning.

More Important Things?

I know there are those of you who are saying that advanced modern thought places woman in a higher plane than that of housekeeper. The emancipated woman has shaken off the shackles of domestic drudgery. Her time is needed for "more important things." You speak loftily of co-operative housekeeping, and quote a writer whose vision of a home is "a large block of flats in a garden over a common restaurant; the staff is directed by an elected manageress and her deputy; a competent kitchen-staff under a well-paid chef prepares the meals."

Well, if that's your idea of a happy home it isn't mine. Gone from such a "block of flats" would be all the romance of little Ruth's beefsteak pie, and of Bella's breathless delight in her culinary achievements. "There is," says a certain clever woman, "a theory that it is better for any one to do many things for himself than to have them done, *even done better*, for him." Ruth's adventures and Bella's, Elinor's and Miriam's, are all a process not only of achievement but of development. It isn't the busy woman who has nervous prostration; it is the woman who, domestically, "never will know, and never will understand."

And as for advanced ideas and emancipated woman, some of the biggest-brained and broadest-minded women are the most competent housekeepers. Brains make for efficiency in all directions. The most ardent suffragist of my acquaintance is a charming English girl who heads parades with her yellow banner upheld to the skies. She is a singer of reputation, but she and her lovely mother keep no maid, and, with only the help of a woman who comes in to do the heavy work, they serve such little suppers and such delectable luncheons that the people of their world wait expectantly for an invitation. And they do this because they like to do it, and because they can do it better than any moderate priced maid could do it for them.

Oh, it's a great adventure, this one of the pots and pans! It is an adventure which has been shared by every pioneer woman who has helped to make a new country. It is an adventure which goes way back to the primitive fire, and to the woman who cooked the meat that her man had killed.

I am sure that of the girls who read this, there will be many home-keeping, house-keeping ones. Perhaps there may be some who, like Elinor, are hating the "sordidness." With these, and with all of you who have ears to listen, I shall leave these gripping words of one of our greatest Presidents: "There are many forms of success, many forms of triumph. But there is no other success that in any shape or way approaches that which is open to most of the many, many men and women who have the right ideals. These are the men and women who see that it is the intimate and homely things that count most. They are the men and women who have the courage to strive for the happiness which comes only with labor and effort and self-sacrifice, and only to those whose joy in life springs in part from the power of work and sense of duty."

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"Germany From Within To-day"

The funniest thing that he has perhaps ever written appears in February MACLEAN'S from the pen of Canada's great humorist, Stephen Leacock — an imaginary visit to Berlin under the Bolsheviks. He finds Von Tirpitz planning a new navy, an *inland fleet;* Frau Frupp, an apple woman; Von Bethmann-Hollweg, a cab driver; Bernstorff, a Bolshevik and president of the Scavengers Union. He finds a *Get From Under* committee planning a trade war on the world and half the population of Berlin in English clothing or Scotch kilts. He finds—

But read the article. There's a long laugh in every line. It is farce, however, built up on pretty shrewd truths.

You will find this a remarkably interesting number. The bold, fighting face of Admiral Beatty is on the cover and inside are the following big features:

Wanted—A National Policy, by Sir George Bury.
The Campaign Against Britain, by Agnes C. Laut.
The Outlaw, by Robert W. Service.
The Farmer in Politics, by J. K. Munro.
The Strange Adventure of the Thumb Tap Clue, by Arthur Stringer.
Old Times in Canada, by Walt Mason.
Lend Me Your Title, by Onoto Watanna.
The Three Sapphires, by W. A. Fraser.
Wild Miners I Have Met, by Ward Smith.
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PIONEER HINTS

Choosing A Homestead

By CHINOOK

CHOOSING a homestead is an important decision. To all, then, who may be contemplating a move to a new country, these few words of suggestion:

As among provinces and districts we shall not discriminate. The writer lives in the upper region of the Peace River Country and what follows has particular applicability to his own section.

Having selected a general locality in which to prospect, get in touch with Government bureaus from whom literature and official information may be obtained. Ascertain the whereabouts of the Land Office for the district and obtain from it upon arrival plot maps showing quarter sections open to entry. Make quiet inquiries for a competent guide.

Horseback is the landseeker's ideal mode of conveyance in a rough or partly timbered country. Thus mounted, one can penetrate bluffs, cross deep coulees, ford or swim streams and follow survey slash lines through timber. If the rider loses his way, the mount, given his head, may bring him safely out.

Autumn is a good time to inspect a country, for one may then see the growth it produces. Also, he can judge by the effect of frost on wild vetch and other plants the approximate liability of a certain aspect to frost injury—a point of prime importance. He can estimate the dependency of streams and other sources of open-water supply. But any month when the snow is off the ground will do. Selecting a farm under snow is like buying a pig in a poke. Only in rare cases is it warranted.

Examine the Soil

Without attempting to rate all factors in their order of importance, let us emphasize the land. It is the foundation upon which success is to be built. There is now and then a genius who will make a good farm out of a piece of poor land, but he is the distinct exception. Usually the prosperity of the homesteader and those who follow him through generations to come will depend rather largely upon his original judgment of soil values. It is easy to be deceived. Tenderfeet, I notice, are likely to be over-impressed by a rank growth of native peavine and vetch. Now, these wild legumes are very desirable plants for hay and pasture but as soil indicators they are not at all dependable. They thrive best in fresh brule, where, in addition to some windshelter and supports to climb up on, they are favored by plenty of potassium in the ash left by the fire. Also, just after a burn, they suffer less competition by grass, which as time passes crowds them pretty well out of the open prairie. You may find a veritable jungle of wild vetch and peavine on raw clay from which the humus has been stripped by a hard fire and which would be quite inferior for production of ordinary farm crops. Seek a good depth of black loam, five inches or more if possible, with a good, deep subsoil. Of course, for the sake of getting high land one may have to take soil with only three or four inches of loam, or even less than that, but plow-depth of black soil is very desirable. On old sod-bound prairie, you may find the best of soil clothed with a short, weedy, shrub-spangled growth of grass. Rely not upon surface indications. Dig down.

Fortunately, few landseekers are so verdant as one I heard of last summer. He was a city man, accompanying a party who were inspecting a tract of ranch land. There was occasional mention of hard-burned soil, and the tenderfoot gathered a wrong impression. Kicking up a place where the loam was deep and dark, he observed sagely, "Pretty black. Must have burned hard here." And his friends had the laugh on him all the way back to Montreal.

Poplar Marks Good Land

Poplar is the best general indication I know of first-class agricultural land. The Saskatoon shrub is good too but is in itself objectionable from the standpoint of breaking. Spruce usually favors wet or very light land. Willow predominates in well-saturated "draws" and on raw-clay hillsides. The slope and elevation of these latter areas, however, often render them comparatively safe from frost and may thus compensate for some degree of inferiority in soil-quality. But the man who has to grapple with willow on clay land should be sure of considerable compensation, for the clearing of such land almost always involves labor and expense far in excess of expectation.

In the Peace River country there is a most amazing difference in the liability of different aspects to frost. High land bordering lakes ripens Marquis wheat safely in nearly every year. Low land removed from open water cannot be regularly depended upon to ripen oats. Other things being equal, elevation counts much. The writer lives near the crest of a hundred-feet slope at the foot of which is a slough. Bordering that slough there is a touch of frost about half the nights of each summer. At the head of the slope, tender garden stuff like beans and squash have a fair chance of maturing without artificial protection. From the standpoint of the settler's garden alone this is important. Elevation being equal, a western or south-western aspect is rather preferred to any other, but this rule will not always hold; and, moreover, it must be understood that frost does not always strike hardest in the same spots. Even old-timers are puzzled by its vagaries.

Importance of Good Water

The importance of an assured supply of good water can scarcely be over-emphasized. A strong spring may add a thousand dollars to the value of a homestead. Whilst in our neighborhood water can usually be obtained by digging and always by drilling, yet, the element of uncertainty and the expense, first of getting the well, then of installing and using the pump, not to mention the hauling of water until the well is ready, are factors to be reckoned with. Seldom should one put up any expensive buildings without at least locating water with a test auger. Pioneering loses much of its hardship with a good water supply insured from the start.

The amount and kind of growth to be cleared off the land should be considered with great circumspection. Willow is the worst we have, especially where occurring on clay land. Poplar is serious enough but can be dealt with economically in time, and if one has thirty acres of fairly open land to "prove up" on, he need not worry so much about some poplar on the rest, especially as the best grazing is usually found in thin scrub and the day is coming when poplar will be worth money for fuel, poles, etc. This subject is too big to treat fully just now, but allow us a parting hint. Much land that seems clear and open has trouble beneath the surface in the form of roots and rocks.

Look Out For Rocks

Be on the lookout for rocks. If many show on the surface, there are almost certain to be a far greater proportion at the bottom of the furrow. Eastern-

ers accustomed to stony land often under-rate the drawback of a few rocks but when they come to "break," they find that the wide-bottomed breaker lay is jarred much worse than the narrow lays with which they have probably broken "new ground" in the East. Besides, one does not move thousands of miles to root around in such rock heaps as are found in some counties of the Eastern Provinces.

Every practical farmer realizes the importance of location as relating to railroads, schools, postoffice, church, etc. A poor location seriously discounts the best farm, while a good one makes a poor farm tolerable. The homesteader, as a rule, however, must take his chances on these points. Until railroads are built, market centres established, and highways constructed leading thereto, it is all a gamble. Trying to homestead near the route of a projected railroad is a risky business, for railroad companies often switch their projected routes for reasons best known to those on the "inside." The engineers who survey a route do not often know where the road will actually be built. They report; others decide. Besides, one railroad does not always determine the situation of the important towns. So it is seldom wise to sacrifice definite advantages of soil, water and so on for the problematical one of situation. Get a good quarter.

To sum up: select good land, as safe from frost as possible and with at least thirty acres easy to prepare for the plow. If there is not open water on the homestead that may be depended upon for a twelve months' supply, get a well before putting up any but the most temporary buildings. Do not take a poor quarter for the sake of present or prospective location. Until steel is actually laid there is no guarantee of existing facilities remaining as at present placed. Do not throw away substance for shadow.

Of course, those who homestead in a partially settled district can well afford to take land which the first comers, faced with the brunt of pioneering, were wise to shun. Then too, individual requirements differ. The man going in for stock husbandry is not quite so particular about immunity from summer frost as one who wishes to raise some grain for sale. But even for stockmen, high land is at a premium. The foregoing hints are intended to be suggestive.

BEES IN WINTER

PROTECT your bees from mice by having the entrances to the winter cases reduced too small, or by covering with a screen too small, for mice to get through, but large enough to allow the bees to pass through freely. The entrances of the hives in the cellar can also be closed by this screening. The temperature of the cellar should be kept at about 45 degrees F. The cellar should be dark, and well insulated against changes in temperature.

If the bees were placed in winter quarters rather light in doors, it may become necessary to feed them before bringing them out in spring. For this purpose, candy made as follows is recommended:—Stir 6 pounds white granulated sugar into one and one-eighth pints of boiling water. When the sugar is thoroughly dissolved, add ¼ teaspoonful tartaric acid and boil at a temperature of 240 degrees F. over a hot fire for 3 to 4 minutes without stirring. Allow the mixture to cool to 130 degrees F. and then stir till it begins to whiten. Then pour quickly into moulds, making cakes about one inch in thickness. When cool, these cakes can be placed on the top of the frames above the cluster.

CANADIAN SHIPPERS TO CHICAGO

GEO. F. Root, Wetaskiwin, Alberta, Canada, had 111 steers averaging 1,060 pounds that sold at $13.85 and 24 cows averaging 1,030 at $12.00 on the Chicago market in January.

Ray Journey, Horizon, Saskatchewan, was on the market the same day with a load of oxen averaging 1,500 pounds that sold at $13.50, and also a load of cows that sold at $10.00 to $12.00.

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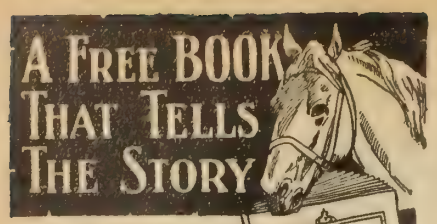

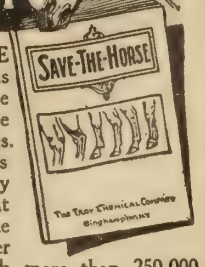

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LIVESTOCK

Grading up the Sheep Flock

By GEORGE K. MILLER

AT the University of Saskatchewan, Saskatoon, a valuable demonstration is being given on building up a farm flock from grade or range ewes. A flock of very average range ewes were secured for the start. These were not even outstanding range sheep, just the ordinary run of ewes that may be purchased any time at average prices. By crossing them with pure-bred rams of three selected breeds, the college is showing how quickly a farm flock can be brought up from this kind of foundation, and developed into a bunch of very high-grade individuals. It is a demonstration in breeding, selection and management that holds valuable lessons for the farmers of Saskatchewan, and also Manitoba and Alberta.

These sheep are managed in a manner that any farmer can follow. They are neither specially housed nor specially fed and looked after. Their summer pasture is rye grass, the summer-fallow and the stubble fields. In winter their shelter is arranged by drawing two granaries to make the ends, banking up behind with straw, and roofing by throwing straw over a few planks or poles fastened in between, the south front being left open. They are fed oat sheaves, some hay and alfalfa, and a little grain about the lambing time. There is nothing about the entire system that any farmer could not easily and as cheaply adapt to his own conditions. It is a practical farm demonstration in building up a sheep flock.

Results so far have been most gratifying. It is a valuable example of the rapidity with which some sheep respond to the grading up process, where good pure-bred rams are used and where a reasonable care is exercised in culling out defectives. The lambs from the first cross are a demonstration in themselves, those from subsequent crosses of the same breed of ram on the resulting ewes are almost equal in weight and quality to the average of the breed from which the sire comes. Altogether it is one of the important demonstrations in sheep husbandry being made by Western farms or institutions, and one of the many valuable experiments in livestock work being carried on at the University.

Importance of the Ram

Many breeders do not attach sufficient importance to the ram. We forget he influences the wool and mutton qualities of from 50 to 100 lambs, while the ewe simply influences two at the most. In this connection the breeding experiment being carried on at the University of Saskatchewan is of considerable interest. A number of grade and range ewes have been bred to pure-bred Shropshire, Suffolk and Southdown rams with the object of improving and building up the grade. The ewe lambs from these matings are bred back again to rams of the same breed as the sire, and in a few years, starting with the commonest type of ewe, it is impossible to distinguish between the lambs of such breeding and pure-breds of the same breed. They have all the characteristics, size and quality of the breed from which the rams come.

Results would indicate that a Suffolk ram on grade ewes makes the most profitable cross as far as daily gains are concerned, although at the end of nine months there is very little difference between Shropshires and Suffolks, and even the low-down chunky, meaty Southdown is not lagging much behind. The main point is that 29 lambs, some of them the first cross from the range ewes, and others the second cross, average approximately 120 lbs. at an average age of nine months. The three heaviest lambs weighed 140, 135 and 131 lbs. respectively.

All these lambs were fed in the same manner, running with the dams on rye grass pasture and summer fallow until the end of August, when they were weaned. After weaning they continued pasturing on rye grass until about October 15th, when they were turned on rape. They continued on the rape until the end of November, when they were turned into a root field to clean up turnip and mangold tops. Since snowfall they have been fed on badly frozen oat sheaves, containing no grain to speak of, and one-quarter pound of whole oats per lamb per day.

$100,000 FOR SHORTHORN PRIZES

AT the January meeting of the board of directors of the American Shorthorn Breeders' Association it was voted to appropriate $100,000 for Shorthorn prizes at the fairs and shows throughout the United States for the current year.

This embraces also county fairs, a special championship bull award being offered at 400 of these, the prize being $25, the entry being owned within the county in which he competes for the prize. The purpose also is to recognize state and district association sales where a show is combined with the sale and all animals entered in the show sold in the sale. A graduated amount is set apart for these combined shows and sales depending on the number of animals entered.

A departure in the way of a herdsman's prize is offered at a number of the leading fairs and shows for neatness and general appearance of their exhibits. The details of this contest, which is a most useful one, will be announced in due time.

The usual appropriations for the established fairs and shows were made with a number of important additions. As these are based on the plan of one dollar from the Shorthorn Association for two dollars from the fair or show association, it becomes apparent that there will be available as a prize fund for the Shorthorn exhibitors of the country an amount reaching well up toward the $300,000 mark.

Never before has such a gigantic sum been set apart for distribution among the patrons on any breed of live stock, nor was there ever more general or more equitable distribution of a prize fund. The beginner and the small breeder are considered in these appropriations. The boy and girl in the calf club have their opportunity to win a share in the prize money. It is an open contest with the best interests of the largest possible number considered.

This action on the part of the Shorthorn directors is in line with the adopted policy of progressive service to the Shorthorn fraternity as a whole. It is a long stride forward in the direction of the improvement of Shorthorn standards and encouragement of Shorthorn trade. It is evident that those who cast their lot with the Shorthorn will not lack for organized support of a most substantial nature.

CANADA'S BACON EXPORTS

As shown by a summary of the trade of Canada during the past three years, issued by the Dominion Bureau of Statistics, the exportation of Canadian bacon amounted in 1916 to 184,873,591 pounds, valued at $36,107,721; in 1917, the bacon exports increased to 227,538,105 pounds, worth $57,313,904, and last year 110,131,946 pounds valued at $34,845,125 were exported.

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OR PAIN KILLER FOR THE HUMAN BODY
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Our butter is all sold at retail price, therefore we can pay the price.
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WILDFIRE

Continued from page 12

across it grew slower, more dangerous. There were many places Nagger should not have been put to—where a slip meant a broken leg. But Slone could not turn back. And something besides an indomitable spirit kept him going. Again the sound resembling thunder assailed his ears, louder this time. The plateau appeared to be ending in a series of great capes or promontories. Slone feared he would soon come out upon a promontory from which he might see the impossibility of further travel. He felt relieved down in the gullies, where he could not see far. He climbed out of one, presently, from which there extended a narrow ledge with a slant too perilous for any horse. He stepped out upon that with far less confidence than Nagger. To the right was a bulge of low wall, and a few feet to the left a dark precipice. The trail here was faintly outlined, and it was six inches wide and slanting as well. It seemed endless to Slone, that ledge. He looked only down at his feet and listened to Nagger's steps. The big horse trod carefully, but naturally, and he did not slip. That ledge extended in a long curve, turning slowly away from the precipice, and ascending a little at the further end. Slone drew a deep breath of relief when he led Nagger up on level rock.

Suddenly a strange yet familiar sound halted Slone, as if he had been struck. The wild, shrill, high-pitched, piercing whistle of a stallion. Nagger neighed a blast in reply and pounded the rock with his iron-shod hoofs. With a thrill Slone looked ahead.

There, some few hundred yards distant, on a promontory, stood a red horse.

"My Lord! . . It's Wildfire!" breathed Slone, tensely.

He could not believe his sight. He imagined he was dreaming. But as Nagger stamped and snorted defiance Slone looked with fixed and keen gaze, and knew that beautiful picture was no lie.

Wildfire was as red as fire. His long mane, wild in the wind, was like a whipping, black-streaked flame. Silhouetted there against that canon background he seemed gigantic, a demon horse, ready to plunge into fiery depths. He was looking back over his shoulder, his head very high, and every line of him was instinct with wildness. Again he sent out that shrill, air-splitting whistle. Slone understood it to be a clarion call to Nagger. If Nagger had been alone Wildfire would have killed him. The red stallion was a killer of horses. All over the Utah ranges he had left the trail of a murderer. Nagger understood this, too, for he whistled back in rage and terror. It took an iron arm to hold him. Then Wildfire plunged, apparently down, and vanished from Slone's sight.

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CANADA

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The Hon. Murdoch McKinnon, Minister of Agriculture, Charlottetown, P.E.I.

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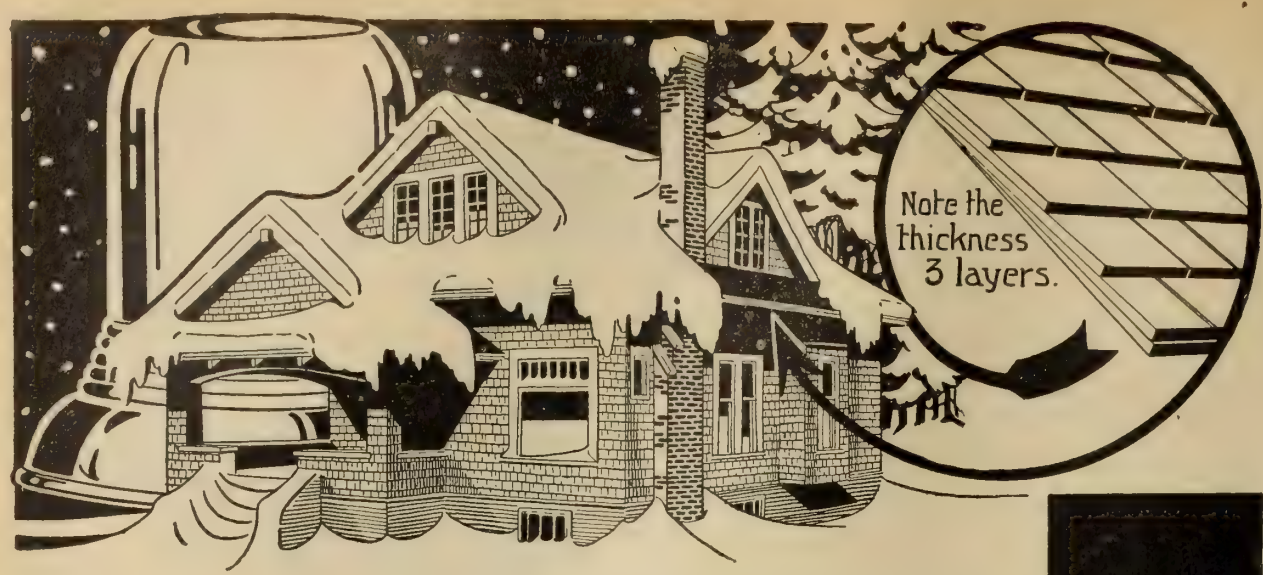

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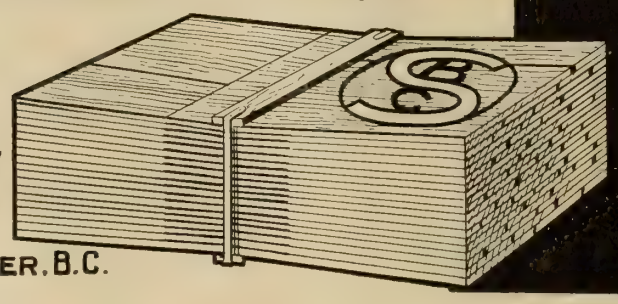
If you own buildings or are planning to build, send for our "Roofing Facts" — a booklet which gives facts about roofs and roofing which you should know. Sent free on request.



Issued by the Publicity section of the
Shingle Agency of British Columbia
STANDARD BANK BUILDING
VANCOUVER, B.C.

Slone hurried onward, to be blocked by a huge crack in the rocky plateau. This he had to head. And then another and like obstacle checked his haste to reach that promontory. He was forced to go more slowly. Wildfire had been close only as to sight. And this was the great canon that dwarfed distance and magnified proximity. Climbing down and up, toiling on, he at last learned patience. He had seen Wildfire at close ranges. That was enough. So he plodded on, once more returning to careful regard of Nagger. It took an hour of work to reach the point where Wildfire had disappeared.

A promontory indeed it was, overhanging a valley a thousand feet below. A white torrent of a stream wound through it. There were lines of green cottonwoods following the winding course. Then Slone saw Wildfire slowly crossing the flat toward the stream. He had gone down that cliff, which to Slone looked perpendicular.

Wildfire appeared to be walking lame. Slone, making sure of this, suffered a pang. Then, when the significance of such lameness dawned upon him he whooped his wild joy and waved his hat. The red stallion must have heard, for he looked up. Then he went on again and waded into the stream, where he drank long. When he started to cross, the swift current drove him back in several places. The water wreathed white around him. But evidently it was not deep, and finally he crossed. From the other side he looked up again at Nagger and Slone, and, going on, he soon was out of sight in the cottonwoods.

"How to get down!" muttered Slone.

There was a break in the cliff wall, a bare stone slant where horses had gone down and come up. That was enough for Slone to know. He would have attempted the descent if he were sure no other horse but Wildfire had ever gone down there. But Slone's hair began to rise stiff on his head. A horse like Wildfire, and mountain sheep and Indian ponies, were all very different from Nagger. The chances were against Nagger.

"Come on, old boy. If I can do it, you can," he said.

To be continued

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Mrs. H. M. Patton, Waverly, Mo., writes, "I fed 2 boxes of 'More Eggs' to my hens and broke the egg record. I got 1,500 eggs from 160 hens in exactly 21 days." You can do as well. Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs," and you will be amazed and delighted with results. "More Eggs" will double this year's production of eggs, so if you wish to try this great profit-maker, write E. J. Reefer, poultry expert, 1972 Reefer Bldg., Kansas City, Mo., for a $1 package of "More Eggs" Tonic. Or send $2.25 today and get three regular $1 packages on special discount for a season's supply. A million dollar bank guarantees if you are not absolutely satisfied, your money will be returned on request and the "More Eggs" costs you nothing. You take no risk. Write to-day. Pin a dollar bill to your letter or send $2.25, special discount for 3 packages. Or ask Mr. Reefer to send you free his poultry book that tells the experience of a man who has made a fortune out of poultry.

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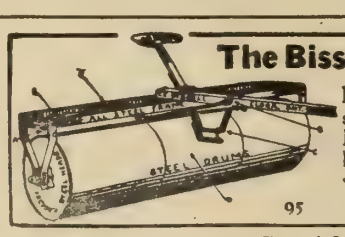

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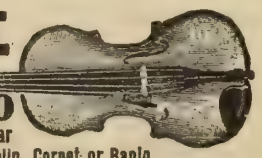
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Doff the Khaki and don the Peabodys.
Beat the Sword into the Plough Share!

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FARMERS' MAGAZINE

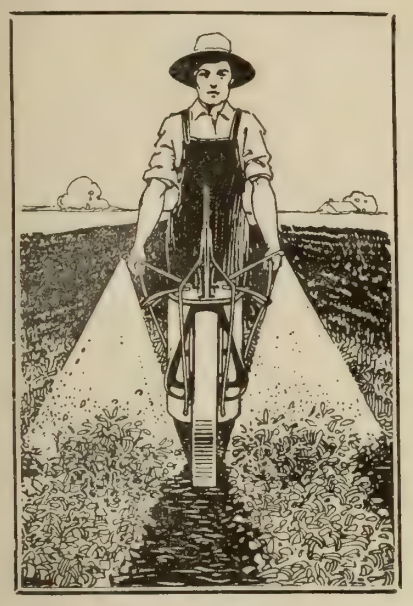
Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto, Montreal, Winnipeg

VOL. XII, No. 4 FEBRUARY 15, 1919 $1.50 Per Year 10 Cents Per Copy

Your Spraying

Changed from a Big Job to a Small One



O-K Canadian 2-row Sprayer

For small acreages it certainly is a surprising time-saver. It does the work as fast as you could run a wheelbarrow over your crop. It is used like a wheelbarrow and is just as easy to operate between rows. If need be a horse can be used for heavy ground. It sprays two rows at a time and there is no stopping for adjustments once it is set for width of rows. It throws out a fine plentiful mist that reaches every fold or surface on the plants, two rows at once. The discharge pipe can be detached for spraying trees, etc., and may be adjusted instantly for both height and width of rows. Tank holds 8 gallons. Write for full particulars.

PROPER spraying may save you the cost of acres of potatoes this year. Our sprayers cut down both work and time, leaving you not a reason in the world for taking a chance on bugs and blight. It turns this big job into a little one and leaves you extra time for other things and for spraying oftener. You can have time to spray **to prevent** bugs and early and late blight.

O-K Canadian 4-Row Sprayer

Think of spraying an acre of potatoes in twenty minutes! It works like a charm, even on heaviest land, spraying efficiently four rows at a time. One horse pulls it easily, and the driver can watch every operation. There is easy access to all controls.

The 54-gallon tank is made of heavy galvanized iron, with reinforced heads; it is well rivetted and soldered, so that there is no danger of leaks. The agitator inside keeps the liquid thoroughly mixed, giving no time for the ingredients to settle. The pump is all brass; desired pressure is easily regulated, or shut off at the end of the row. Now is the time to secure your machine, to protect your crops and get increased yields. We can ship right away.

O-K Canadian 4-Row Sprayer

O-K SPRA

Here is without a doubt the surest, most convenient and most durable hand sprayer ever invented. It is equipped with the "efficiency" non-clog nozzle, which has a thimble-shaped strainer, and will keep in action longer without attention than any other type. Its shape prevents clogging.

Take a look at the curved lance. (See picture). It saves many a backache! It lets you get the nozzle under the leaves without bending your back.

The non-clog nozzle and curved lance enable you to use the O-K Spra for trees, shrubs, vines, bushes, or for disinfecting barns and hen coops, or for applying oils and washes to stock. Certainly no farmer could be persuaded to give up its use once he has had this all around handy and effective sprayer in use.

Time is Precious

If you leave off buying until your busy time you might put it off again —and lose far more than the cost of the machine. Write us for free literature with full descriptions and valuable information about bug poisons, fungicides, etc. Let us tell you how you can do your spraying in quick time and how to mix spraying materials.

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Makers of the Famous O-K Potato Planters and Diggers

4000 Tons
Standard Stock Feed for Sale

DURING the War, for the purpose of assisting the farmers, the Department of Agriculture purchased a considerable amount of Standard Stock Feed (Recleaned Elevator Screenings). A large quantity of this valuable feed for hogs, cattle and sheep has been distributed and has given general satisfaction. Owing to the return of peace, and the approach of normal market conditions, the Department has decided to place at the disposal of the farmers its remaining stocks, now in storage at Fort William. The price will be

$25 Per Ton in Bulk, Unground
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We believe that the feed is excellent value at this price and that it will pay stock feeders at different points throughout the Dominion, to consider the purchase of carlots or more.

What is Standard Stock Feed?

It is known to farmers as Recleaned Screenings, or Grade A Screenings or Buckwheat Screenings, "We found," writes a Carleton County user, "that our live stock took to the screenings quite readily; our experience with it was eminently satisfactory." Many other stock men have given expression to similar opinions.

The Analysis of this feed is as follows:

Chemical	
Protein	14%
Fat	5%
Fibre	8%

Botanical	
Broken Wheat	46.1%
Oats	1.0%
Flax	.1%
Wild Oats	10.65%
Wild Buckwheat	35.15%
Mustards	.7%
Other Seeds	.65%
Chaff	5.65%

Note Standard Stock Feed contains a higher percentage of protein and fat than either wheat or domestic buckwheat.

While the botanical composition varies to a slight extent, the percentages of protein, fat and fibre remain almost constant, and, consequently, the feeding value is practically uniform.

Standard Stock Feed has been tested in feeding trials at the Brandon, Lacombe and Ottawa Experimental Farms. For finishing pigs it has been found fully equal to barley. When ground it can be used for all classes of stock with very economical results.

If arrangements can be made to have this mixture ground on arrival at destination it would be well to do so. The vitality of any weed seeds present would thus be practically destroyed. At the same time the feeding value would be increased due to the ground material being more digestible.

Other Feeds

The Department also has corn available at Moose Jaw, Calgary, Saskatoon, and at Tiffin, Ont. besides a quantity of linseed oil-cake meal at Montreal to be sold at market prices. Write for particulars.

Terms: Sight Draft with Bill of Lading attached, payable on arrival of the car. Orders should be sent direct to the Feed Division, Live Stock Branch, Ottawa. Feed may be purchased in car lots only (about 33 tons to car). Get your neighbors to co-operate with you and take advantage of this opportunity.

All orders will be filled strictly in the order they are received, and in view of the possibilities of snow blockades, which may occur at any time now, stock feeders will be well advised to order early.

Freight Rates

Freight Rates per 100 lbs. from Fort William to several representative points are given in order that you may get some idea of the cost delivered at your station. Brandon 17c, Calgary 28c, Edmonton 29c, Moose Jaw 22c, Saskatoon 26c, Toronto 30c, Montreal 30c, St. John, N.B. 44½c, Moncton 44½c, Halifax 45½c.

Write for Pamphlet No. 18 giving full particulars about Standard Stock Feed.

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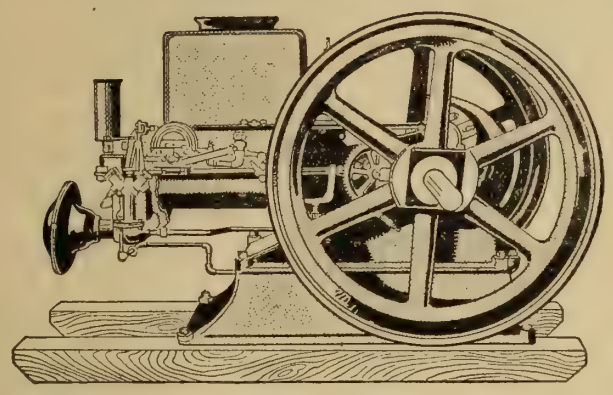

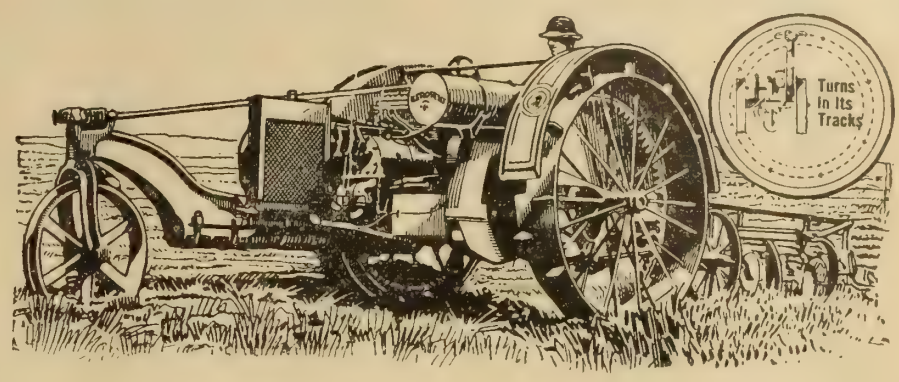

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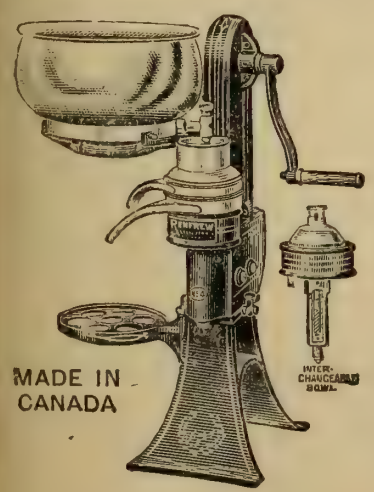

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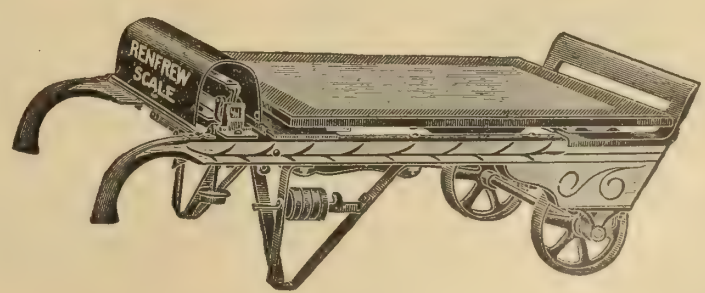

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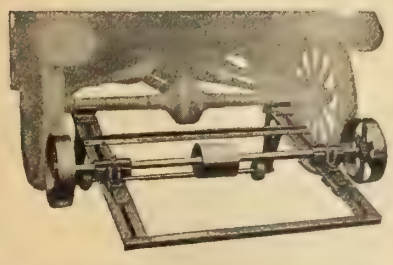

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An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.

—Lloyd George.

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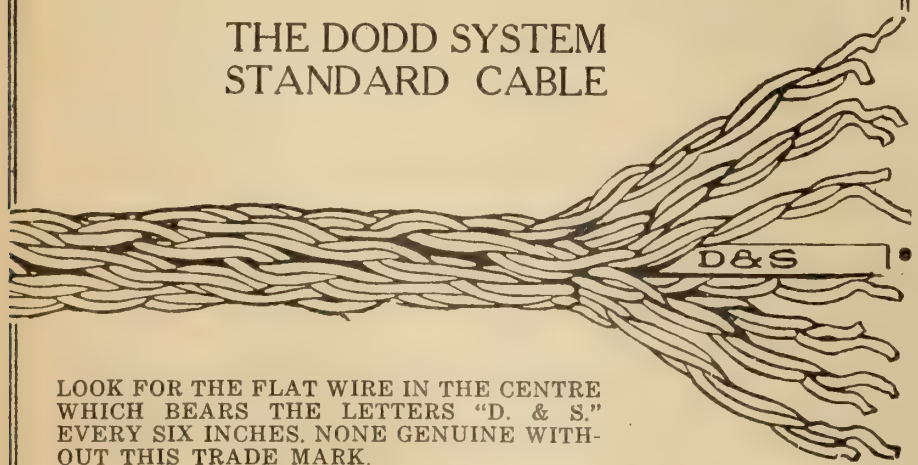

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INVESTMENTS

OUR EXCHANGE HANDICAP

THE premium on New York funds over Canadian funds continues to rule slightly above two per cent., says R. Goldwin Smith. Late last year it was anticipated that the movement of grain from Canada to Britain would, as usual, create a demand for Canadian funds in New York, where Britain has in former years arranged settlements for her purchases from Canada, and in this way help to correct the exchange rate. This hope has not been realized for a very evident reason. Canada has lately advanced credits to Great Britain for the purchase of Canadian grain and other products, which obviates the necessity for Great Britain to settle in New York for her purchases in Canada. Meanwhile the trade balance between Canada and the United States rests heavily against this country, involving in the neighborhood of $400,000,000. This adverse balance could be reduced by a curtailment of imports from the United States, larger exports to that country, the export of gold, or the placing of loans in New York. An embargo exists against exports of gold from Canada, but the other three means are available.

GETTING TOGETHER

From the *Financial Post*

PERHAPS one of the most interesting phases of Mr. Vere Brown's address before the United Farmers of Alberta at Edmonton, was when he dealt with the argument of the individual board of the American unit system. He said that his bank stood ready to meet the public in this connection if they wanted local directors to decide the bank's policy. Further extensive inquiries had already been made in this connection and the verdict was that the Western farmers did not want local boards—there had been a distinct feeling that customers did not want their business known to the neighborhood.

The attitude of the farmers at the Edmonton convention on the banking question and the decision against asking for a fixed price for wheat indicates an appreciation of business and economic conditions which, we believe, can be developed also in relation to the tariff. The West is out for lower duties and the demand must receive reasonable consideration. But we do not believe that the free trade talk is anything but political propaganda.

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EVERY farmer should carry life insurance of some kind. By taking out a policy early in life he not only gets his premiums paid up early but he protects his young family from many an adverse circumstance if he should be suddenly taken away.

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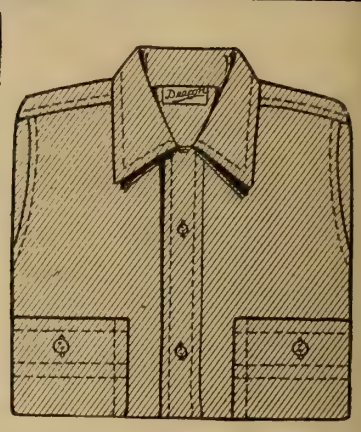

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Crerar Champions Livestock

By F. M. C.

HON. T. A. CRERAR, Minister of Agriculture for Canada, foresees continued prosperity for Canadian livestock, And his faith is evidenced by the departmental works being done now to steady our markets and to guarantee a constant stream outwards from Canada's ocean ports.

At a banquet given by the Canadian National Exhibition directors to the livestock men at Toronto last week, he laid down the requisites for a dominating livestock trade in Canada. First our producers must put the quality in. Secondly, they must have transportation facilities, and thirdly the market end must be made easy both by removal of any obstructive embargoes and by a system of credits elastic enough to handle the trade.

It was the first really worth-while speech of Hon. Mr. Crerar since he became Minister, at least to the livestock men, who had begun to feel that he was not fully alive to their interests. The way he measured up, both in the vigor of his address and in his thorough grasp of the situation, not only surprised the breeders but delighted them greatly.

Too long the rumors have been current that Canada was asleep at the European switch. It has been common knowledge that the U.S. has been steadily on the job through Hoover and his band of experts. It was felt that he had secured all the orders for the bacon and beef needs of Europe, with Canada standing idly by taking the plaudits of a pleased paternalism.

Hon. T. A. Crerar

"We have been steadily on the job," said Mr. Crerar, "ever since the armistice was announced. We have in Europe Mr. James Robertson, who knows his business well, and is making such progress that the end will fully justify our estimates. Every move that it was possible to make we have been making. But it must be remembered that the difficulties have been almost insurmountable. Few on the outside can understand these, but it is sufficient to say that already things are coming our way slowly, so that we feel confident that farmers will find a market for every animal they raise at profit-making prices for some time.

It must be known by all men that Great Britain has a floating indebtedness to the U.S. besides the loans made by her. And in the exchange of trade it is absolutely essential that the two countries should be associated very closely. And that is why the U.S. can get her products into the European markets much more easily than can Canada. It is a matter of hard business, but for all that sufficient pressure is being brought to bear on the Allied Council at Paris to procure for Canada some certain measure of steady trade. The present interruption is therefore only regarded as temporary.

In advancing his point, the Minister laid great stress upon the production of quality in our Canadian exports. They must, like our No. 1 wheat and our cheese, force a market by the very superiority of the goods. The criticism has been made that American and Argentine beef went on to the British markets in a more pleasing form than did our Canadian beef. It will be necessary to increase our efforts to produce first-class beef.

On account of the port of Montreal being only 3,000 miles from Liverpool as against 6,000 miles from the Argentine, or still farther from Australia, we in Canada, said he, had an inside track that we must take measures to function to its fullest. To this end it is necessary that we build cold storage plants at Montreal and perhaps at Halifax and St. John. We have shipped from Canada, during the war, an immense amount of chilled beef and the work has been so successful that the trade must continue. Livestock men are particularly gratified to know that the Government have plans under way for the erection of a million dollar cold storage plant on the harbor front at Montreal at once, while similar equipment will likely grow up at Halifax and St. John.

Canada's strategic position as a producer of food in the future is still more alluring. It must not be overlooked that the United States, which for many years had been regarded as Europe's storehouse for food, would, in a very few years, become a food importing country. The industrial population of the United States was increasing very rapidly and would continue to increase, as the manufacturers and merchants of that country sought new markets for their products in the older countries.

The Minister laid emphasis on the fact that every effort was being made to provide refrigerator service on the ocean.

The old question of the embargo against Canadian live cattle was being renewed. Many parts of Canada were in a better position to raise stockers than they were to finish the beef and, for such, the lifting of the embargo would mean much to our prosperity. Measures were being taken towards this end, and assuredly the coming report on the matter would leave it clear that there was not any disease in Canada's herds to make the least vestige of excuse for the continuance of the barrier.

In the matter of finance, said Mr. Crerar, the arrangement of credits overseas was being expedited so well that it is expected that its effects will be noticeable in a short time.

Canada's chief prosperity, agriculturally, lies through the livestock channels and now that the farmers have responded so well to the call for meats, they are in a position to push their advantage in world markets to the limit. Livestock Commissioner Arkell is already overseas armed with every argument and device to protect Canadian livestock trade, while recent despatches indicate a more favorable turn to the situation. The fact that the U.S. is maintaining her hog prices and beef prices must react favorably for Canada.

Hon. T. A. Crerar has spoken out. Let him wax even more enthusiastic in championing the interests of the greatest class in Canada, and he will find that he is supported well. For indeed agriculture demands more Cabinet prominence than it gets. Mr. Crerar represents 4,000,000 people.

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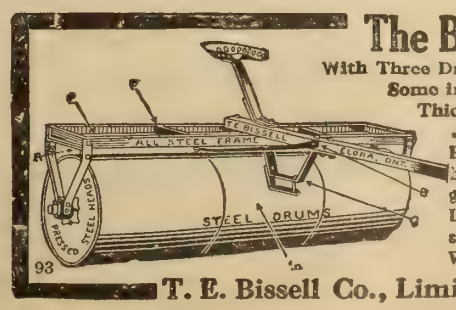

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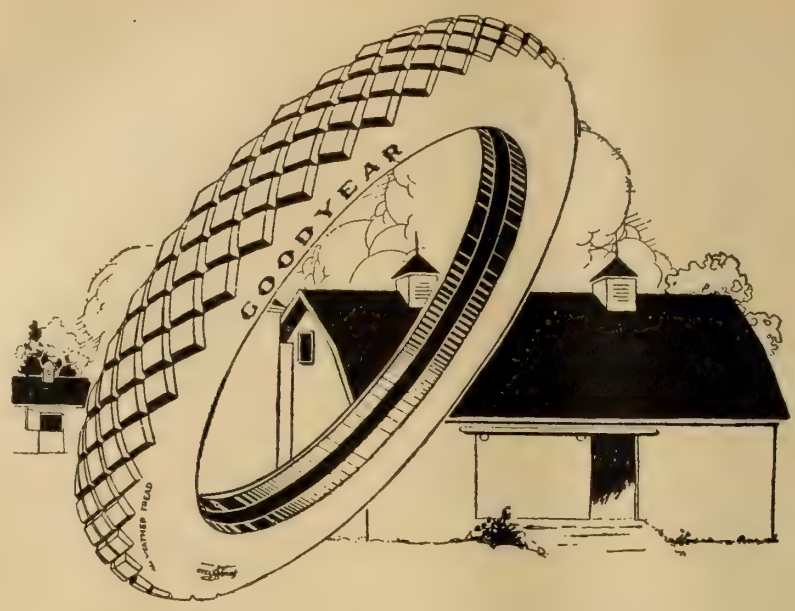
See Advt. also on page 57



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FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. FEBRUARY 15, 1919 No. 4

Cash Crops From Canadian Farms

A Little Survey of the Field

By THE EDITOR

CAUTION, which was largely thrown aside during the last four years, comes back now to the farmer's plans as he makes out his schedules for this year's money-making crops and deals. The changed conditions, with the possibility of lower prices for his produce, make for thoughtfulness in his programme. What shall I sow? What crop will be a money-maker for me this year? How are the livestock returns going to measure up? Shall I spray my orchards more, looking for a return to pre-war fruit demands? Shall I cut out my wheat acreage and increase the coarse grains? Or can I take a small acreage in some other line that will still keep my farm's income sufficiently high to make farming pay?

These are all intensely interesting questions to every farmer, on the very threshold of spring preparations. A few opinions by some prominent men and a few facts of the situation may help us to decide. It is a notorious fact that when the situation looks certain many men can prophesy with exceeding unction, but at a time like this many leaders refuse to be quoted by us on the situation. And indeed, opinions deduced by the farmers themselves are often nearer the mark. As an aid to such men on the farms, the facts of this issue are presented. Let us look over the situation.

Livestock Possibilities

James E. Poole in this issue, and there is no better authority, predicts high prices for cattle during the next three months. He fears many farmers will rush in and buy high-priced stockers and then lose out in the finish. His advice is to buy good cattle where we have abundance of our own grass or feed.

In hogs the situation is quite different. We have a greater hog population than ever in our history. But the demand for such is good. The European countries will want all that credit can be arranged for. Hoover, the U.S. Food Controller, has been extremely busy in maintaining prices in the U.S. which helps Canadian farmers also. No one can tell what the future will be, but if we suffer a drop in prices, it will stimulate consumption and this react on demand again. With much lower-priced grain, costs of pork production will decrease. In short we believe that the man who stays with the hog business will be all right. J. E. Brethour, the big Yorkshire breeder and authority, tells me that he looks upon the next few years to be one of the best money-making periods of hog history.

Horses, especially heavy horses, are likely to be in better demand. The farmers want big draughters. It is a notable feature of the situation that Percherons are gaining in popularity in Canada.

In the sheep business, business continues to be brisk despite the wool break and the menace of Australian frozen mutton coming in. The mutton trade will likely brighten toward spring with the higher price of beef. Wool prices will likely be lower this year, but yet sufficiently high to pay well. Farmers should keep their heads in the matter of sales and watch the markets closely. Now is a time to back up all co-operative concerns for the farm benefit.

In the matter of poultry, it is likely that prices will continue on paying levels. Our egg markets in Great Britain ought to take all our surplus. In poultry meat the immense consuming home population is our surest guarantee.

Purebred Stock Sales

Canada's trade in purebred animals will continue to be a paying one for sometime, is the general opinion. As the Minister of Agriculture told the breeders, the maintenance of high quality is everything to our future. Sales have recently been held that secured high averages for breeding cattle. It is a good sign to see men breeding in Canada animals of such high merit, as the Elliott sale at Guelph was an example. The campaign for better sires will bear fruit. Every farmer should be a missionary in this work, as a scrub animal in a neighborhood lowers the value of all cattle in that district.

Dairy cattle are laying the right foundation for future business. The R.O.P. and R.O.M. tests are doing much to increase the sales. Farmers are coming to see that good prices for such seed stock return them handsomely. The Holsteins, Ayrshires, Jerseys and Guernseys are each doing good work. Their future will not grow dim for a long time.

Breeders of all kinds of stock will do well to keep their records up-to-date and be ready for any sales that may come. Outside demands may spring up at any moment and the man on the job is the one who benefits.

Our Field Crop

The wheat situation is one that is causing many people much concern. We are inclined to the belief that it is like many other troubles—one that never happened. The world will readily absorb all our wheat during 1919 and 1920, if speculators do not produce panics here and there. Undoubtedly farmers will grow more coarse grains this year.

Many are lining up for special crops such as flax, sugar-beets and peas. Both flax and sugar-beets offer big inducements to farmers who want to devote only a few acres to each crop. Over 30 flax companies have been formed in Ontario and rumors of big capital for a linen mill are current. Ontario should produce immense quantities of sugar and every encouragement ought to be given the business by the farmers. The pea crop has been a money-maker also.

In the matter of apples and other fruits the outlook is much brighter. Every farmer with trees will likely spray more and attend to the sales end better. Big fortunes have been made in apples by dealers this winter in supplying the overseas trade.

Clover seed production must come back to more importance. Root seeds, also, should hold the place they have won.

Truck farming will likely be equally good this year. Cabbages, potatoes, onions and other lines, produce good returns generally, but marketing facilities must be a prime consideration.

Abraham Lincoln's old cabin in the States visited by a modern implement of agriculture.

OUR DAIRY PRODUCTS

J. A. RUDDICK, of Ottawa, says that the normal course of the production end of the dairy industry has not been disturbed or interfered with in any way by the events of the last four years, and there is nothing in the future that seems to demand any departure from the methods which have been followed in the past in promoting the growth and development of milk production or the manufacturing of the various milk products. The dairymen are not called upon to worry over any problems of reconstruction or reorganization. They have only to follow the well-beaten path, and bend their energies towards greater production and a high standard of quality in their products to ensure success.

With the exception of the commandeering of the creamery butter in October, the sale of dairy products in the primary markets was not interfered with during the war. Just how long control over export may continue the writer is unable to say. No one on this side knows at the moment (Jan. 22) what the intentions or wishes of the British Ministry of Food are with respect to this matter. It may be that the exigencies of the food situation in the United Kingdom will impel the authorities there to continue for another season the system of control and distribution which has been in force for the past two years, and of which the purchase in Canada by the Dairy Produce Commission has formed a part, as far as butter, cheese, and condensed milk are concerned.

Canadian dairymen are fortunate in that they have an assured market for all their surplus products. The United Kingdom is the best and practically the only market in the world for dairy products. Our position is secure in that market. At the present time they are receiving only about one-tenth of the supply necessary to provide for normal consumption.

There will probably be some increase in the imports of butter and cheese from continental Europe during the coming season, but it will be some years before the supplies reach pre-war proportions. Both Holland and the Scandinavian countries have been obliged to slaughter large numbers of their livestock on account of the impossibility of securing concentrates for feeding purposes, and these herds cannot be replaced all at once. In the United States there is a shortage of both butter and cheese, and they have not exported any since May last.

Canadian cheese stands at the top and is now the standard article on the British market. We might increase our production very considerably and still find a ready sale for it at highest prices. Practically all other countries that have a surplus for export send that surplus to the markets of Great Britain. It would be a mistake to attempt to divide our exports with other

Continued on page 62

FARMERS' MAGAZINE

Canada's National Farm Magazine

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA

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CONTRIBUTORS' names will not be forwarded, as they are considered confidential.

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AS YOU WERE!

FARMING, to the real farmer, has always been an enjoyable occupation. It may have its drawbacks, due to uncertain prices and whimsical weather conditions, but the outdoor work on his own free acres under a blue sky that no one can corner, has compensations not computed in dollars and cents. As Mr. Drury said in his address in Toronto, there is a love of the soil inherent in farmers that attaches them to the home acres, making them endure injustices past all logical reasoning by trade economists. Perhaps it is for this reason that wily politicians and other interested designers are able to make their own dreams come true so often.

Because of this very virtue, free democratic farmers have always been the mainstay of a country's financial and economic soundness. While fads and frills may divert the industrial life for a time, the agricultural element holds the fabric intact until their flightier neighbors return to that saneness of mind which marks a contented and prosperous people.

Just now, the real work of the nation is to get to work on a pre-war basis. As you were then, all farmers! Make your own farms models of content and plenty. Think sanely, vote intelligently. Produce as the market demands and see to it that combinesters and squatters on national resources are picked off in handsome style by the sharpshooters you send to Legislatures and Parliament. It is a good time to live. It is a real time to enjoy farm life.

In this issue we cover a variety of subjects treated in a very comprehensive way for the benefit of the man who is doing things upon his own little corner of the country. Doubtless this issue will be found to be exceedingly helpful to practical men and to buyers of farm needs.

MOTHERS' PENSIONS

BY the mothers is a country made. Is it fair that the country should have them to struggle unaided to bring their children through want and poverty, or to have to give them up to the care of a state institution? It is to be hoped that the bill now coming before the Legislature will settle this question happily for Ontario and that the movement will be promptly extended to every province.

That a mother should be required to part with her children simply because of poverty or other adverse circumstances over which she has no control is nothing short of an outrage; nor is the crime much less when the child must be recorded as a dependent in order to enable the mother to procure the needed help. The separation of a mother from her children because of her inability to support them is unjust to the children, the mother and the state. The institutional child has not an equal chance with the child developed in a home, and our national life must necessarily deteriorate if any large number of our citizens must be reared in public institutions. It has also been found, where the system of Mothers' Pensions has been in use, that the cost to that country is considerably less than the per capita cost of supporting such children in public institutions.

THE EXAMPLE OF N. A. AMITY

NORTH American peaceableness has been emphasized by Secretary Daniels of the U.S. when in a recent speech he said that a new policy of justice and right must replace the old, centuries old world spirit, which held in the days of Alexander, of Caesar, of Napoleon and of the German Emperor and of men of that class.

The spectacle of the boundary line between Canada and America, mutually respected though unarmed, through the years, is the best illustration of the condition which ought to exist all over the world.

Certainly there is more safety in good-will than in guns.

PRIVILEGE, NOT TARIFF, THE ISSUE

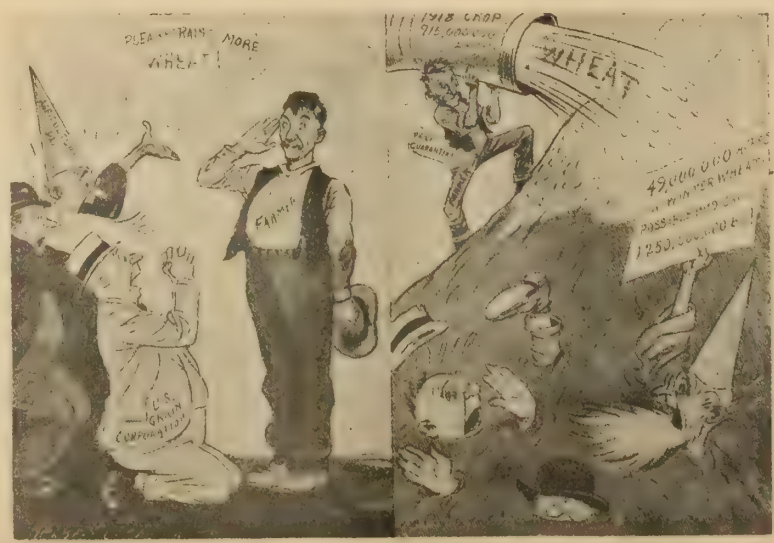
THE following editorial from *The Financial Post* appeared in a recent issue:

"In a recent issue we printed the address on "Economic Problems," by E. C. Drury, the chief mouthpiece of the farmers on this topic. It was delivered before the largest and most influential assembly of farmers that has ever taken place in Canada, some fifteen hundred of them. The writer was present during many of the discussions, and chatted with many groups of farmers. More than a year ago we wrote that the farmers were, individually, very fair-minded. In talks with them since, we cannot but conclude that their great grievance is not the tariff but the combination of financiers and manufacturers; all through the speeches and all through the conversations that thought continually cropped out. They frankly admitted that a tariff was necessary as a means of raising revenue, and that it might be necessary for the upbuilding of industries based upon Canada's natural resources, but if the tariff was to be used to enable a few groups of manufacturers to extort prices, then they were prepared to smash the whole tariff."

FARM ORGANIZATIONS

THE farmers are organizing in every province of Canada on the rock basis of co-operation in their buying and selling, with the goal in view of securing for the men who produce more of the returns paid by the consumer for his food. That such a movement was inevitable, can be clearly understood by every man who compares the prices paid for farm products at the farm door and the prices received for those same goods entering consumptive channels in the city.

PRODUCE MORE WHEAT PLEASE



From "Country Gentleman."
AND HE DID.

Farmers have always been a frugal people. No great gains are ever made by even the most successful and it is not to be wondered at that co-operation should gain headway fast. The wonder is that farmers have not gotten together sooner than they have.

The success of the Western farm movement has stimulated all the provinces and outside countries are already craning their necks to see how the thing is working. During the formation periods, doubtless there will be indiscretions but they are headed the way to success.

EDITORIAL NOTES

GREAT Britain ought to lift the cattle embargo.

WHY does the National Livestock Union not shape up?

GET into your farming business with all zest this year.

ADVERTISE your farm products and increase your sales.

O. P. V. silage has been a remarkable success in Nova Scotia.

CANADA as a nation demands equal considerations in trade matters.

SWEET clover makes an ideal pasture. Consider sowing some this year.

APPLE eating should become a general practice for digestive reasons alone.

FARMERS must keep up the fight for more farmer members of Parliament.

THE United Farmers of Alberta want scalpers eliminated from the grain trade.

EXCESSIVE loyalty demonstration has generally a nigger in the fence somewhere.

WHO gets the profits on our high woollen goods? 50 cent wool does not account for it.

GOOD roads work on our highways should respect old shade-trees more than it does.

PROF. LEITCH'S report should be read by all people who say the farmer is profiteering.

NO telephone or electric company has any right to mutilate the trees on your roadside.

PARLIAMENT opens February 20. Our correspondent will report on their doings every issue.

THE liquor traffic is doomed. No one really desires John Barleycorn any reprieve in North America.

THE snake may be a good friend of man but he has too many evil associations to make him a pet for most of us.

MANITOBA has a good dairy convention coming on. The dairy cow must be responsible for some of Norris' surplus.

FARMERS and manufacturers are not so far apart on the tariff when you hang a few of the extremists on either side.

THE repeal of the War Times Election Act does not mean allowing aliens to vote. It means common decency to our own good people.

GERMANY has a President now and meets in its first free Parliament at Weimar, Goethe's town and the historic centre of German liberalism.

THERE are no signs yet that party Government is any better than it used to be. It always worked tooth and nail to prevent an honest expression of public opinion.

HIGH-POWERED dairy cows are none too common yet on our farms. The young man who changed his 3,000-pound average to a 6,000-pound average did his country good service.

A BREEDER at the Berkshire swine breeders' meeting recently moved for a $100 entry fee on U.S. hogs, to bring the U.S. Association to an appreciation of our market. It is short-sightedness on any breed to be so exclusive and the U.S. farmers will likely see it now.

Funny Features About *Unusual* Hogs

Grand Champion Poland Chinas at Chicago, 1918.

Typical Berkshires as seen at Chicago.

By GENE DAY

The feeding of hogs has received considerable attention by our readers recently. This article reviews the various unusual breeds. The outlook for future hog business is still bright, despite the temporary eclipse. There is money to be made in pigs and will be still when the smoke clears away.—Editor.

ALTHOUGH the seven standard breeds of swine, the Yorkshire, Berkshire, Poland China, Duroc Jersey, Hampshire, Tamworth and Chester White, are dominant in popularity in most hog producing countries there are several other breeds which are keen competitors with the major breeds for supremacy. In sections where corn or green pasture crops are practical, profitable and dependable the raising of hogs merits special attention and brings into consideration all breeds which are adapted for profitable and rapid pork production.

Among the strange breeds of swine of importance are the Mulefoot, Spotted Poland China and Red Berkshire breeds as well as the Essex, Victoria and Small Yorkshires. Mulefoot hogs, which derive their name from the fact that their hoof is solid like that of a mule or horse rather than cloven like the hoof of the average hog, are not a new breed of recent origin, as Aristotle writes of animals of this type, while history of several centuries ago makes frequent mention of the hogs whose feet were not cloven. Some experts assert that the breed is a sport, the result of the atavistic law which develops the fact that occasionally in certain classes of livestock an animal will not breed true to type but rather will date back to the characteristics of early progenitors, the resultant progeny being entirely dissimilar to the general run of the breed of which it is representative.

The Mulefoot Hog

However, the Mulefoot hog is not a sport or example of atavism, as the animals breed true to type and where crossed with any of the seven standard breeds, it invariably transmits to the offspring the solid hoof, the official trademark of the Mulefoot. Where the Mulefoot breed originated is a matter of keen dispute, as Denmark, South America, Holland and South Africa all claim to be the land of nativity of this unusual breed. As is true of other of the minor breeds of hogs, there is no definite information available to indicate just where the breed began and what animals were the foundation stock. The Mulefoots have been developed and improved in the corn-raising countries where they have been introduced and popularized.

Extravagant claims relative to the immunity of Mulefoot hogs to hog cholera have been made repeatedly, but actual evidence shows that when exposed to the plague, the Mulefoots succumb as quickly and as readily as any of the standard breeds. Milch goats have been said to be free from tuberculosis along a similar line of reasoning. This is not true, as where exposed to the disease, the goats will contract it, although not quite so readily as will the majority of dairy cattle, consequent on the higher resistance of the goats to disease as a result of their healthy, open-air life in the hills and mountains of their native heaths and highlands. Do not ever let anyone bunko you into believing that when you buy Mulefoot breeding stock that you are purchasing certain insurance against the ravages of hog cholera. If you are deluded in this respect and neglect to vaccinate the pigs and to practise all the control measures which usually are effective in combating cholera where the plague is discovered in time, you are liable to find an unwelcome guest in the hog pens when you least expect company, and this visitor will be the insidious, malignant cholera, the curse and scourge of all hogdom.

The Mulefoot sows are very prolific and prepotent and are unusually good mothers, these excellent qualities operating in no small way to extend the popularity of the breed. The hogs are active and especially good rangers and rustlers with the ability to produce flesh and gain in live weight under conditions which would be discouraging to many of the other breeds.

One of the greatest objections to the Mulefoot breed comes from the marked variation in type and conformation which obtains. This is due in no small amount to the fact that the improvers of the breed have not practised as intelligent selection and careful mating as was essential for the betterment of the breed characters. Some enthusiasts of the breed claim that it will dress out with a smaller percentage of offal and waste than any of the other breeds of swine. The veracity of this statement is questionable and there are no authentic and dependable slaughter tests available to use as evidence one way or the other.

The Poland Chinas

As far as breed history is concerned there is every evidence that the family lines and trees of the Spotted Poland China and the Poland China breeds follow identical courses. In the official records of the Poland China breed, early mention is made of the three colors of the hogs, namely black, white and spotted, which were characteristic of the porkers during the era pursuant to the inception of this popular breed. The average hogman will not be far from the right track if he calls the Spotted a full brother or sister of the Poland China and different from this well-organized and regulated breed of lard hogs only in so far as wide variations in the matter of form and figure are concerned. The variability of the Spotted Poland China is the greatest of any of the hog breeds. This breed takes to itself the special privilege of changing in color, type and conformation whenever it takes such notion, and as a result to describe the breed as uniform and adhering to a fixed standard of excellence is to make a mis-statement. Many Spotted Poland Chinas are alike in color but here the resemblance ceases, as in regard to form, make-up and general outline they are not at all alike. The fact that the breeders who handle the Spotted hogs have been too lax in remedying this defect and the natural inclination of these hogs to breed away from a uniform, standard type are the most marked disadvantages connected with the Spotted Poland China.

Breed to this model of a Yorkshire brood sow.

The Cheshire Pig

The Cheshire breed of swine arose from the amalgamation of the blood of the White Suffolk and Yorkshire families. The result was the inception of a breed which so strikingly resembled the Berkshire breed that the animals have often been nicknamed "White Berkshires." The Cheshire is a large hog like the Berkshire, with a long body which often is criticized due to lack of depth. The feet and pasterns could be stronger to advantage, while the hams and shoulders are of the desirable type. Occasionally the bone of the breed shows too great refinement. The Cheshire looks like a medium-sized Yorkshire, the breed weighing very heavy for its size, dressed weights of 400 to 600 pounds of the fattened market hogs being often attained. Cheshires are so deceptive in appearance and weigh so heavy for their size that often livestock buyers who purchase the animals by the head at "guess weights" get much more hog than they had figured on.

The Cheshire sows are very prolific and bear and raise large litters of pigs. The hogs are fairly good grazers and rustlers and make economical gains in the feedlot, although they are inferior to Berkshires and Poland Chinas as rapid and economical fatteners. When the Cheshires are not fed excessively on corn their flesh makes fine bacon, showing the desirable blending and marbling of lean and fat meat. Authorities like the meat of this breed and compliment it as being extremely succulent, juicy and tender. Cheshire sows crossed on prepotent and typy, well-bred boars of the standard breeds give rise to progeny which produce a high grade of pork. Although the Cheshire is not widely distributed, it is a breed which is worthy of attention in sections where there is a demand and market for the breeding stock and fat hogs.

Other Breeds of Hogs

The Victoria breed of hogs arises from the mingling of the Poland China, Suffolk, Chester White, Berkshire and Yorkshire blood. The breed is about similar in size to the Poland China and Berkshire breeds. At maturity, the sows weigh about 450 pounds and the boars 600 pounds apiece. The body is broad and deep, the back is long, broad and level, while the shoulders and hams carry the thickness and fullness which is indicative of profitable slaughter. In a land of abundant pasturage and plenty of dependable grain, the Victoria breed of hogs will prosper. As feeders, the Victorias are inferior to most of the standard breeds despite the fact that the quality of pork produced is good. Large litters are common among the Victorias and as a rule the sows raise the majority of their pigs. One factor which exerts to extend the popularity of this breed is that although white in color it is not as susceptible to sunburn, mange and itch as are the other white breeds of hogs.

The black Essex breed of England was formed from

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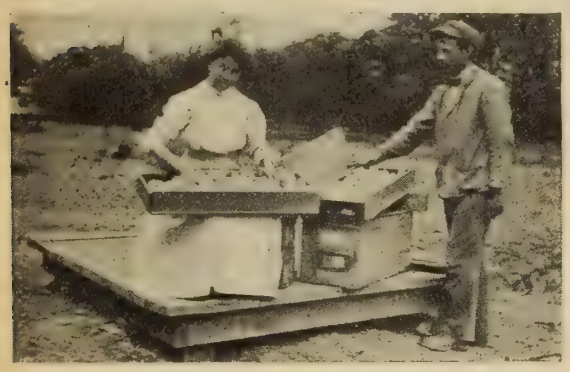
Some Cues *in the* Chicken Business

Eggs, Incubation and Brooding

By J. ERNEST PLACE

THE man who said that the education of a boy begins twenty years before his grandmother is born gave out a suggestion which may well be applied, in principle, to the breeding of poultry, by the proper selection of parent stock. It does not matter whether one is breeding for eggs or poultry meat, or for a combination of both, the importance of a well-selected breeding pen cannot be over-emphasized.

There are many enthusiastic poultry-keepers who seem to think that so long as their birds, as a flock, are of a certain breed or variety, or of so-and-so's strain, that is all that is necessary. Speaking generally it is of course, desirable that the stock be of a dependable strain of the breed favored by the individual poultry-keeper, but it is particularly important that each individual bird in the breeding pen is a suitable specimen for reproduction. It is necessary to be able to identify breeding hens according to the age at which they commenced laying, the length of the period of production and the duration of resting and moulting time. In breeding table fowls, there are such factors as rapidity of growth, weight, and prolificacy to consider.



A satisfactory hatch of fluffy Leghorns on the writer's farm.

Most poultry men have not the time to keep individual records but they can collect a good deal of useful information regarding a bird's past behavior by means of colored leg-bands which are put on from time to time, according to the bird's showing.

Pipe system brooder house used on large plants.

Banding the Legs

With a view to making flock matings for egg production, some large breeders use a band of a different color for each year. Pullets that begin laying before a specified time are given a second band, and as they keep up production they receive another, and still another "certificate," so that after the first year's laying the most productive birds can be easily identified and selected for the next year's breeders. As a result of having a different color of band for each year it is often discovered that some very good layers keep at it for two or three years; while some pullets are indifferent producers and are marketed. It is generally dependable that the birds that come into laying early and continue late are the heaviest layers; and the strongest constitutioned. But it sometimes happens that very productive hens become run down and are not in a proper condition for breeding, also digestive disturbances and colds occasionally occur about breeding time.

Go Over Roosts

Therefore it is advisable to go carefully over the flock at night, before and during the breeding season. Uusually it is a fairly safe rule to eliminate any birds having cold shanks. While it is not necessary to carry a book on poultry diseases into the pen, it is well to recognize that cold shanks indicate defective circulation, and that, in turn, is associated with a train of evils that are easier prevented than remedied. This is especially applicable to breeding males. A male bird, known to be the son of a heavy layer, going to roost with a full crop and having normally warm shanks will do much toward building up the productiveness of a flock. On the other hand a single male having an empty crop or cold shanks on going to roost, is liable to start trouble that may take years to eradicate.

One to Twenty

In the egg breeds such as Leghorns and Minorcas and others of the Mediterranean class, one good cockerel will fertilize the eggs of twenty hens. Eggs are fertile, usually about five days after mating and fertility continues in many instances more than two weeks after removal of the male. It will be seen that it is safe to remove males now and then for a short rest. They should be kept out of sight of the hens and fed well. Males of the heavier breeds are mated to proportionately fewer hens.

A good deal can be accomplished toward improving the appearance of the general "run" of farm eggs by careful selection of eggs intended for hatching. Where white eggs exclusively are desired it is advisable to eliminate creamy-tinted eggs, also undersized and misshapen ones. By following this method and using breeding males that are sons of hens known to have laid eggs of a good white "Bloom" the outcome, eventually, will be a yield of pure white eggs from the entire flock.

Brown eggs may be selected in the same way, but the process requires longer to "fix" the desired tint.

Eggs for Hatching

Experiments conducted a few years ago at Cornell University, Ithaca, N.Y., showed that the most suitable temperature at which eggs should be kept while awaiting incubation is between 50° and 55° Fahr. They should be kept in a dry place, covered to prevent evaporation and turned once each day. A flat box about two inches deep answers well. If the box is full a few eggs should be removed from one end, and those remaining just rolled gently over with the flat hands. Eggs may safely be stored for hatching fifteen to twenty days, but fresh eggs give better results, other conditions being equal. When the breeding pens have been mated up, it is time to begin *getting the incubator ready.* It is advisable to spray the inside of the incubator and thoroughly scrub the egg trays with a good disinfectant solution. Then tilt the incubator so as to drain out the surplus liquid, otherwise there may be some likelihood of the bottom boards buckling and causing an escape of heat. While the inside of the incubator is drying the lamp should receive a good overhauling. An extra burner and spare wick should be on hand in case of emergency; also it is economical to use a new burner for each incubator every year, and boil the burners in strong soap suds or lye after each hatch. The advantage of having an extra burner on hand at a moment's notice will be recognized when it is remembered that an incubator's lamp is doing duty twenty-four hours a day for about twenty-four days at a stretch, so that it is not surprising that lamps sometimes get out of order. The most common cause of lamps "smoking out" is that when the incubator has been standing over winter the flue is generally cold and there is not the proper draught. This results in an accumulation of soot, often necessitating the removal and thorough cleaning of the heater. However, this may usually be prevented by caution and a little patience. Allow plenty of time for the machine to warm up for the first hatch—a couple of days if necessary—so as to insure its being well warmed through, and thereby obviate the tendency to too great a drop in temperature when first the eggs are put in. It is a good plan to run the machine empty for two or three days before the first hatch is started off, so as to make sure that proper adjustment of the regulator has been made. The thermostats on most incubators can be quite depended upon to take care of several degrees change in temperature provided they are carefully adjusted. The disc on the regulator arm should swing free about an eighth of an inch above the outlet on the heater when the temperature on the egg tray is 103°; the disc should rise higher at 104° or 105° and should lie flat over the hole, which should also be evenly and entirely covered, when the thermometer registers 102°. A little patience in making the proper adjustment before putting in the eggs will often avert disappointment. As soon as the eggs are first put in the machine the temperature in the egg chamber will quite naturally drop to the temperature of the eggs. If the regulator worked properly before the eggs were put in, it will "blow off" all right when the eggs warm up to the proper temperature. It is positively foolish to try to hurry the process by turning up the lamp flame. If eggs are required cooked it is generally more satisfactory to cook them on the kitchen range, also it is more economical to cook just enough for a meal rather than an incubator full at a lick. It usually requires about twelve hours to regain the proper registration of temperature after the cold eggs are first put in the machine. The time required varies slightly according to the type of incubator used. Hot water incubators usually regain temperature more quickly than hot air machines. If the thermometer does not register 102° in about twelve hours, it is safer to make the incubator room a little warmer until sufficent animal heat is generated, than it is to turn up the lamp flame. The closing of a window, or the temporary use of an oil heater, will usually bring about the desired elevation of temperature, with much less risk than is incurred by turning the lamp flame up too high. Generally, it is found to be advisable to start off a hatch in good time in the morning, so as to allow all day for the eggs to warm up, and to see that all is in order before bed-time. There is a little difference of opinion regarding the temperature at which an incubator should be run during the first week. Some operators run at 102° first week; 103° second and 104° third. Poultrymen who follow this custom usually use contact thermometers. Others contend that "103° till the eggs 'pip' and then 104°" is correct. This is (or should be) where the thermometer hangs slightly above the eggs. It is apparent that the exact temperature in the egg would be the same in either case, the difference

Master Saunders steals out to feed Biddy.

Separating the cockerels from the flocks early, as done by the writer.

Continued on page 21

When the STOCKBREEDER SUCCEEDS

Real Help at Right Moments

By PROF. WADE TOOLE

A prize Rambouillet ram from Wyo. This breed is getting into Canada fast.

FROM the very beginning of man's struggle to wrest a living from Old Mother Earth, he who turned his attention to the production of domestic animals has been considered among the most progressive agriculturists of his time. His dealings with animal life have always tended to make of him a better citizen. At first, it was comparatively easy to get a living from the soil-mining process of growing field crops and consuming them as such, returning nothing to the land; but, as time passed, the fields gradually failed in fertility and all the while the human population increased rapidly until one scarcely needs to enquire why livestock is kept in the twentieth century and why *farm animals are looked upon as the sheet anchor of agriculture to-day. The increasing demands for human food could not be met without it. A balanced agriculture is impossible without our domestic animals. Soil fertility and plant growth depend upon livestock.* The economy of the farm depends upon it, for vast quantities of human food which would otherwise never exist are manufactured by farm animals from feed which would go to waste without horses, cattle, sheep, swine and even poultry to turn it to profitable account.

Vast acreages of broken land would be nothing but barren waste were it not for the grazing livestock which change it into valuable land for the rancher. Many a man who now has worked the year round would be idle almost half the time if it were not for the fact that livestock gives him profitable employment winter as well as summer. Agriculture makes progress according to the percentage of livestock breeders and feeders numbered among those engaged therein. The stock farmer must plan ahead. He must exercise care and foresight and through his intimate knowledge of his stock developed by this care and thoughtfulness for their welfare he develops a kindly spirit, a trustworthy disposition and a self-reliant character. His work is a source of pride and satisfaction to him and progress and better citizenship result. The successful livestock farmer of the present day *must be a man capable of understanding a rather complicated business,* but if he works with his head as well as his hands —if he studies carefully, breeding, feeding and marketing he should be able to make a reasonable profit from his farming operations. Perhaps success or failure depends more upon the personal factor than upon any other factor entering into the business. This is true of most businesses in which man employs himself. One man makes a success where another is a total failure under almost identical conditions. The onus is on the individual and *no man who has not an inherent love for livestock and a measure of business acumen ever becomes great in the annals of livestock fame.* However, it may be possible here to throw out a few hints which may help the stockman to so watch his business as to make it a little more interesting and profitable.

The problem of the stock breeder divides itself into three or four separate considerations which may be discussed under the following heads: *Breeding, Feeding, Disease Prevention* and *Control* and *Salesmanship,* or ability to market to the best advantage.

A good face on a good breed, growing in favor fast.

In the beginning we will assume that the breeder has already laid the foundation of his herds and flocks and is not troubled with the problem of selecting the best herd sire available to mate with a few choice females of good breeding and individuality. The man who has to buy all his stock has problems peculiar to his situation. If he is purchasing grades he must select those approaching as nearly as possible the recognized type of the breed or breeds they represent and always should he plan to purchase or arrange for the use of a high-class pure-bred sire of the same breed. It pays to look well to the sire, for a good one is at least half the battle won and a poor one is the whole fight lost. The man who has his herd or flock already stocked should be careful in the purchase of additions to always work toward improvement, to buy well-bred young animals with a clean bill of health. It pays to keep a clean herd clean by taking precautions in buying particularly against such diseases as contagious abortion and tuberculosis. It is generally safer to purchase from herds and flocks which show by the numbers of young stock around a good and regular breeding record. The purchaser should assure himself that his prospective purchase is likely to be a valuable breeder.

Breeding Pointers

Assuming that the breeder has a reasonably good stock of farm animals around him one of the first problems he runs up against is the age at which his stock should commence breeding. No hard and fast rule can be laid down but it is plain to those of experience that breeding should not commence while the animal is yet too young and cannot profitably be delayed too long. The following table shows good average ages at which well-grown females of the various classes of livestock may be bred without great danger of injury or economic loss:

A big Holstein producer on the Avondale Farm, Brockville. Do you know her name.

Earliest Breeding Age for Female Farm Animals

Draft mare	Dairy heifer	Beef heifer	Ewe	Sow
2 to 3 years	15 to 21 months	18 to 24 months	yearling	8 to 12 months

It will be noted from the table that there is a rather wide range of ages given. Under no consideration should anything but a well-grown draft filly be bred at two years, and if she gets with foal she should not be worked in her three-year-old form and possibly it would be better to allow her to skip a year in breeding. Dairy heifers of the smaller breeds, such as the Jersey, if well grown, may be bred at 15 months while those of the larger breeds, like the Holstein, are generally as well left until they are 20 to 21 months old. Beef heifers should be well grown when bred, consequently they should be left to 18 or 24 months old. It is generally believed that ewes do better left until they are yearlings rather than breeding as lambs. Sows should be sufficiently well grown at 8 to 12 months to begin their first period of pregnancy.

The age at which the sire commences service is also important. In draft stallions service should be very limited until the sire has reached four years of age. As a two-year-old and three-year-old he should cover very few mares. It is safe to start the bull in service as a yearling, say at about 15 months, although he should not get more than 15 or 20 cows the first year and his heaviest service should not come until he is at or nearing maturity. A ram lamb may be used to from 12 to 20 ewes provided he is well grown and extra good care is taken of him but it is generally considered that a yearling or older ram is safer. No ram should do a heavy service until after a year old. The young boar

A prize-winning Shorthorn heifer this past season in the States.

Under the same tree stands a champion white bull from the same farm.

should be from 9 to 12 months old before used in service and then only to a small number of sows. True it is that many females and males both are used in the breeding herd earlier in life than the ages recommended here but it is not good practice.

Many a breeder gets poor results from his breeding operations through neglect of one essential factor to success with breeding stock, viz., exercise. Too close confinement of male or female breeding stock is disastrous. The sire should have several hours each day in an open paddock when the weather is fine and females carrying young should be exercised regularly in the open air. An abundance of exercise keeps the animals muscular and vigorous, tends to develop a strong foetus and lessens danger of loss at parturition.

Alfalfa crops grow luxuriantly where livestock farming is practised.

Gestation Periods

Every breeder should know the period of gestation of all classes of his livestock that he be prepared when the time comes for the mother to deliver her young. Perhaps this cannot be shown to any better advantage than in table form.

Gestation Period of Farm Animals

Animal	Number of Days	Bred on	Due
Mare	336	Jan. 1	Dec. 2
Cow	280	Jan. 1	Oct. 8
Sheep	147	Oct. 1	Feb. 25
Sow	112	Jan. 1	Apr. 22

Of course the length of time young are carried varies with the individual animal, but the figures given are reasonably close to the average.

A careful record should be kept of the date of service at the time, and as soon as the breeding female seems "settled" the date of expected arrival of the offspring should be calculated and marked down. A good plan is to have a little book for the purpose ruled somewhat as follows:

Breeding Record Sheet

Name and No. of animal.	Date bred	To what sire	When due	Progeny	Remarks
Black Beauty (cow) 14769	Jan. 1, 1919	Commodore 28763	Oct. 8, 1919	(Fill in notes regarding sex, color, etc.)	Held to first service

Precaution at Parturition

Extra care is necessary at time of parturition to prevent losses. The female animal, be she mare, cow, ewe or sow, should be in a stall or yard to herself a short time before parturition and she and her young should be kept by themselves for some time afterward. The sow requires several days to become acquainted with her surroundings before farrowing and she and her litter should be molested as little as possible for some days afterward. The sheep and her young lambs should be kept separate from the rest of the flock until they become thoroughly acquainted with one another. The cow should have a box stall with her young calf and the mare a roomy box stall or yard in which to foal. The attendant should plan to be present at parturition and to render aid in deliverance only where absolutely necessary, but to be ready to help the new-born animal to get its first natural nourishment. The attendant should have on hand in case of emergency a strong pliable rope, a sharp knife, a piece of strong cord and a disinfectant such as a 10 per cent. solution of carbolic acid.

The young safely on the way to rapid and satisfactory growth, the next point to concern the breeder in so far as the breeding end of the game is concerned is age to wean. This depends on growth and other circumstances. The following table gives good ages at which to wean well-grown, nursing domestic animals.

Weaning Age of Nursing Young

Animal	Age
Colt	5 to 7 months
Calf	6 to 10 months
Lamb	5 months
Pigs	Eight weeks

The calf referred to is a beef calf allowed to suck its dam or a nurse cow. Pail-fed calves should get whole milk for three weeks and sweet skim milk for five or six months, the longer the better.

Every breeder should avoid in-breeding, that is mating closely related animals. The practice is dangerous.

Castration of male animals not intended for breeding purposes is important. Colts may be operated on at a few weeks old, or, as is more generally done, left until they are yearlings. Calves should be castrated at two weeks to a month old; lambs at a week to ten days and pigs in plenty of time to recover from the shock before they are weaned.

The Feeding Problems

The problems of feeding are too many and complicated to discuss in an article of this kind. Outside of the kind and quality of feed necessary, regularity is the most important single factor. It is of first importance that *regular feeding be practised at all times and* clean, wholesome feed is the only kind that will make for success. The feeder should know that the young and growing animal and the dairy cow require feeds rich in protein, while the older or fattening animal does not require so high a proportion of nitrogenous compounds in its ration. The feeder should know roughly the composition of the commoner feeding stuffs produced on the farm as well as that of the most widely used by-products on the market. He should also know in a general way the requirements of each class of animals and be prepared to compound suitable rations, using those feeds which are most economical as indicated by composition and market prices.

A safe rule to follow in horse feeding is one pound of oats and one pound of good hay per 100 lbs. of weight of the horse; more if at hard work and less if idle.

In cattle feeding it should be remembered that no better all-round concentrate to use as the basis of the ration has yet been found than oats. Oats, whole, crushed or ground, form the basis of most growing and producing rations. To these must be added feed high in fattening qualities such as barley meal or corn meal and oil meal for fattening cattle and feed high in protein such as bran, cottonseed meal and linseed meal for milk production. For sheep no better grain feed is available than oats whole or crushed, with a little bran for in-lamb ewes.

For hogs, to start, sweet skim milk is best after weaning and to this may be added shorts or middlings and later finely ground oats and barley chop, with corn coming in later as the pigs grow. For young pigs getting no milk up to ten per cent. of tankage may often be used to good advantage in the ration.

Again, we say feed regularly; feed clean feed; feed only what is eaten up clean at each meal; keep mangers and troughs clean; water regularly and preferably before feeding.

When it comes to a consideration of disease the stockman must rely more on preventive measures than upon curative treatment although he should be prepared to see that the latter is administered in case the need arises.

First and foremost the breeder must be careful in the purchase of new animals into the herd. Valuable breeding cattle for instance should be bought subject to the tuberculin test and reasonable assurance should be had that contagious abortion does not exist in the herd from which purchases are made. Avoid purchasing from herds or flocks in which any contagious disease has been known to exist recently.

The general health of the stock depends very largely upon the care they get. They should be well and comfortably housed. The stockman should see that plenty of exercise is given and that stables are well lighted and ventilated. This means also that overcrowding should be avoided. For instance each cow should have from 600 to 800 cubic feet of air space and the controlled fresh-air inlets should provide 8 square inches for each cow and the controlled outlets about 15 square inches for each cow. Cow stalls should be about 3½ feet wide and around 5 feet long, according to the size of the breed kept. Horse stalls should be about 9 feet long and 5 feet wide for big farm horses. A sheep requires 10 to 15 square feet of floor space and pigs should have ample trough room to feed and plenty of pen room to keep dry.

Light is important. Four or five square feet of glass should be provided for each mature cow and in proportion for other classes of stock. Stables should be dry, clean, light and well-ventilated and stock should get plenty of outdoor exercise. Four to five hours daily is not too much for colts to be out in the yard. Young cattle do better where they get regular outdoor exercise on fine days. All but the dairy cows should be accustomed to outside exercise even in winter and some claim that the health of our dairy herds would be improved by the practice, although milk production might suffer. Ventilation is doubly important in the dairy barn where cattle are stabled continuously throughout the winted.

Regularity in feeding is a great factor in promoting general good health and sudden changes of feed should be avoided. All changes in rations should be made gradually and musty, poor-quality feed should not be fed.

Blisters and Lotions

It is impossible to go into the various animal diseases fully but to be prepared for their treatment the stockman might profitably have on hand the materials to make up the following blisters and lotions recommended by veterinarians:

Absorbent Blister

Biniodide of Mercury 2 drams; Iodide of Potassium 2 drams; Water 8 fluid ounces.

Paste Blister

Biniodide of Mercury 2 drams; Powdered Cantharides 2 drams; Lard or Vaseline 2 ozs.

White Lotion

Acetate of Lead 1 oz.; Sulphate of Zinc 6 drams; Water 1 pint.

Colic Drench

Tinct. of Opium 1½ fluid ozs.; Fluid Extract of Belladonna 1 fluid oz.; Spirits of Nitre 1½ fluid ozs.; Water ½ pint.

Liquid Blister

Powdered Cantharides 2 drams; Alcohol 4 fluid ozs.; Water 4 fluid ozs.

Camphorated Liniment

Alcohol 3 fluid ozs.; Oil of Turpentine 2 fluid ozs.; Spirits of Ammonia 1 fluid oz.; Gum Camphor 4 drams; Water to make 1 pint.

The best purgative for the horse is 6 to 8 drams aloes and 2 drams ginger; for the cow, 1 to 3 lbs. of epsom salts; for the sheep, 2 to 4 ounces of castor oil; and for the pig, 4 ounces of epsom salts. These doses are for mature animals.

To keep stables free of vermin, whitewash twice a year with a wash containing a five per cent. solution of carbolic acid. If stock is affected apply one of the commercial dips or for cattle use a dust composed of 4 parts fine cement and 1 part hellebore and repeat in a week or ten days; for pigs try a little ordinary machine oil poured on their backs.

For ring-worm on cattle, which is more or less prevalent every winter, soften the scales with lard, scrape off and apply tincture of iodine.

Sheep should be dipped spring and fall in a standard dip, just before going on grass and just before going into winter quarters.

Good breeding, careful feeding and watchfulness against disease are big factors toward successful stock farming but the stockman must carry his energy a little farther and study the art of salesmanship. Markets must be carefully watched and all stock sold to the best advantage. The breeder of pure-breds must know the strong points of his animals and must be particularly well versed in the relative values of the different strains of his breed. There is often more in strain than in breed. Then, the light must not be kept hidden under a bushel. The best plan is to let the largest possible number of prospective purchasers know what you have for sale. It pays to advertise. The merchant uses printers' ink to advantage; the breeder of good

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HOW HOLSTEINS *Build* FORTUNES

By Frank H. Westney

A snapshot of the writer's herd of Ontario Holsteins.

THE Holstein cattle when first introduced into a new district are viewed with much disfavor. Any mongrel that has a few black and white hairs is called a Holstein, and as the color lines of this breed seem to be dominant over most the color lines of other breeds, a twenty-five per cent. Holstein calf is liable to be colored black and white.

A fallacy among some farmers is that the progeny of a Holstein and Jersey will make a heavy, rich milker; whereas most likely it will possess the good qualities of neither. So we get a lot of scrub stuff that discredits the breed.

I started farming for myself in the spring of 1910, with 1 cow, 1 heifer and 2 steers—fairly well bred Shorthorn grades. Requiring more stock and having a liking for the black and whites, I bought 3 pure-bred Holstein yearling heifers and 2 grade Holstein cows, borrowing most of the money. The two cows calved giving me a red and white bull calf and a red heifer, one of the yearling heifers proving to be in calf. Being very small—about 600 lbs.—she died during parturition. Another heifer proved a non-breeder and the remaining one I still have. She has proved a very fair producer. This made a very poor financial beginning, and with other adversities I found myself in debt at the end of the year. Experience is a thorough, though expensive, teacher, so I resolved to buy my pure-bred stock from reputable breeders.

A Bad Start Does Not Down

By the spring of 1912 I had 5 fair cows all milking, so I attempted making butter and fattening calves, but I soon realized I was not cut out for this. I kept doggedly on until October 28th, 1912, when I shipped my first can of milk to one of the large Toronto dairies, receiving $1.20 per can for the balance of the month. About a month previous I had taken a life partner and from this time I date my success.

December 17th, I received my milk cheque for November, viz. 29 cans, 4½ gals. c. $1.45 per can, $42.86.

I found one can per day cost too much per can to deliver to the station, so I kept increasing the herd by buying other cows, mostly Holsteins, but some grade Shorthorns, Jerseys and Ayrshires. I sent to Ottawa and received forms, so commenced testing. One by one the Shorthorns, Jerseys and Ayrshires failed to come up to my standard, which at that time I set at 5,000 lbs. milk per annum, and were replaced by others that could produce this quantity. I am very glad to say I never sold a rejected cow, other than to a drover, without explaining why she was being replaced. Of course quite a number of Holsteins were rejected, but the percentage was small compared to the other breeds. To-day a herd of thirty cows is in the stable, all Holsteins except one grade Jersey. For the past three years I have bought nothing but the black and whites.

I do not raise any young stock; all are sold at a week old except pure-breds, and I easily find a market for these when a month old at good prices.

Buys All Young Animals

I have been rather successful in replacing rejected cows. My first consideration is age, and I absolutely will buy nothing but young animals and usually just before freshening the first time. A dairyman always runs more risk in buying anything else. A cow may be in fair flesh, and have a fair-sized udder, a mild gentle eye, and yet have faults unknown to any except the seller, and for these reasons he may be selling.

Guides to Milking Quality

When buying a heifer just before freshening, I find the prominence of the milk-veins a good guide. If these show little or the hole through which they pass to the body is small, then she may as well be rejected. It must be remembered the milk-veins in a heifer are much smaller than when a cow reaches maturity. I regard a small thin tail as a fair guide, but a cow with a beefy udder or a heavy, coarse, masculine head or having the beef type will usually come far from increasing her owner's bank account as a milk-producer. Experience has taught me to beware of the so-called dual purpose cow; there is a cow for the dairy and one for the beef, and each in her respective place will do her bit. A large (not pot-bellied) abdomen shows she has a large food capacity and a heavy milk producer must

The new house and gateway which Holsteins built.

be a heavy feeder. I prefer a cow in good fleshy condition, although this may be of minor importance in a heifer, if in the price due allowance has been made. If a heifer does not prove profitable she may be turned over with a much smaller loss than an older cow, also a heifer represents a smaller outlay and usually will increase in value up to six years of age. A hard, dry hair, tight skin and an eye which lacks lustre are probably above all things to be avoided, as these signs all indicate ill-health. The sooner such an animal is turned over as a canner the better, as no amount of feed will profitably fit her for the block.

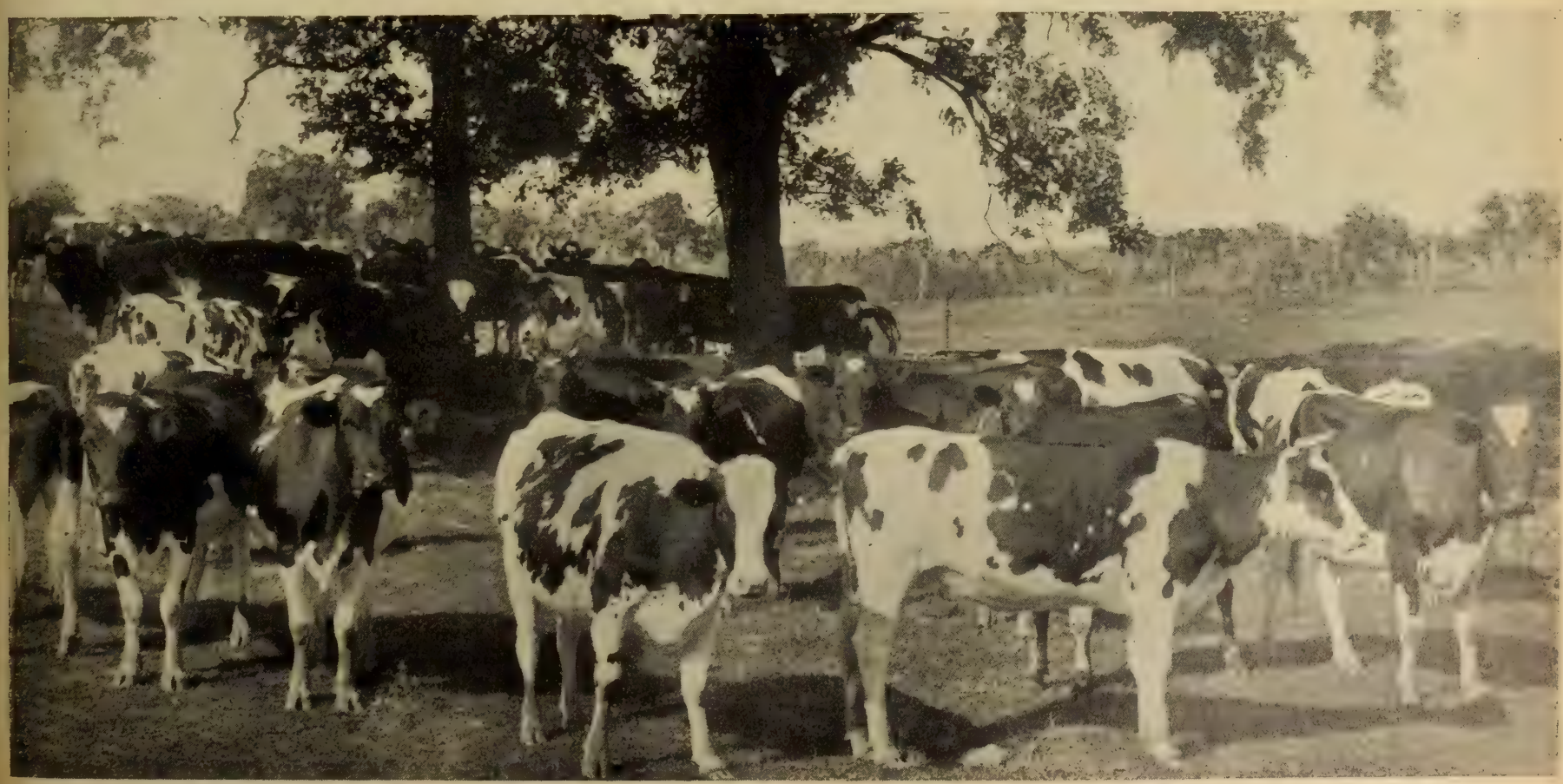
Uses a Milking Machine

We have used a mechanical milker since May, 1914. It was put in on trial, and while the first few weeks it was only fairly satisfactory, yet since becoming more accustomed to it, I would not do without it. We have milked about 65,000 cows with it; the repair bill has been very small. A 1½ H.P. engine easily operates a two single unit outfit, the size I think best for a 25 cow dairy.

Our cattle are turned to grass about the 15th of May, and after becoming accustomed to the change all stable feeding is withdrawn until about September. I believe much more profitable work may be done by allowing the cows to eat the growing feed than to stable-feed them; of course along in the fall, stable feeding is necessary to maintain the flesh or they would go into winter quarters in too thin condition.

Five years ago I sowed the first White Blossom Sweet Clover in this district, and wise men shook their heads. "You have for ever ruined your farm," they said; but after growing more and more of this clover I have yet to find its equal, for dairy cows are very fond of it, much more so than of alfalfa for pasture. It stands the drouth well and will stand an incredible

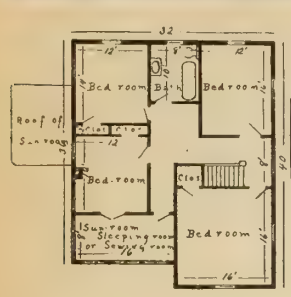
Continued on page 41



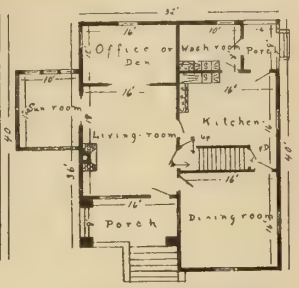
A contented bunch of Holsteins on pasture. You can guess that money is made here.

FARMERS' HOUSE PLANS *By* Genevieve

Favorites From Our Year's House Building Series

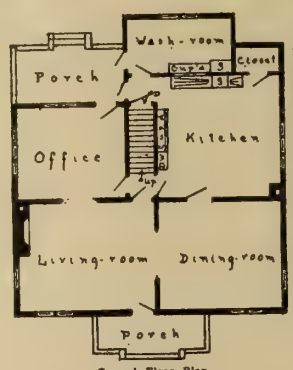


Upstairs Plan.

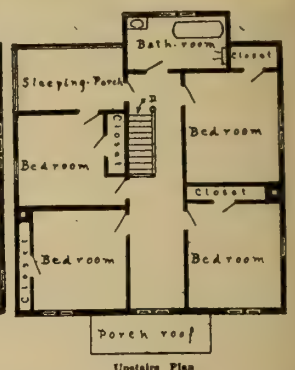


Ground Floor Plan.

The above house was described in the April first issue.

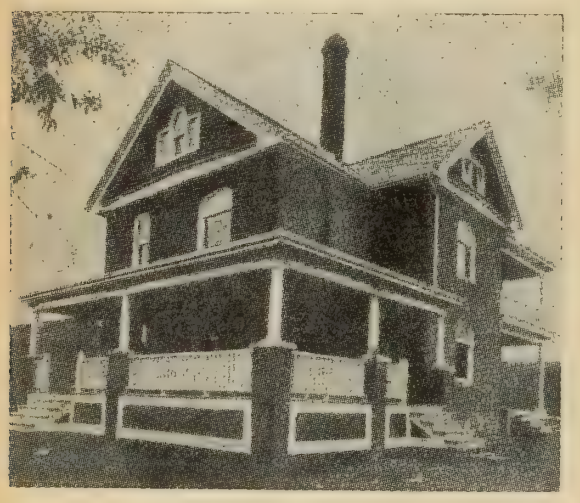


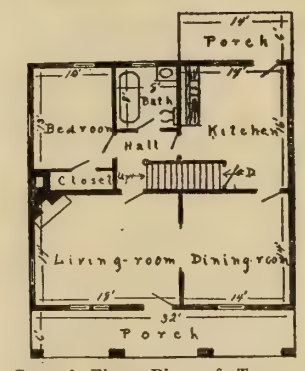
Ground Floor Plan



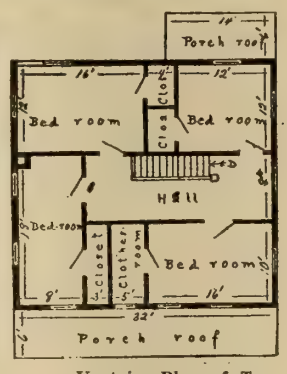
Upstairs Plan

The above house was described in the January first, 1919 issue.

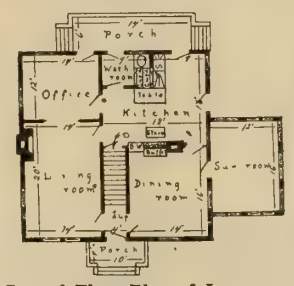




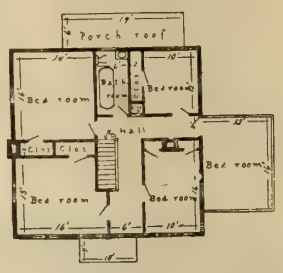
Ground Floor Plan of Top House.



Upstairs Plan of Top House.



Ground Floor Plan of Lower House Above.



Upstairs Plan of Lower House Above.

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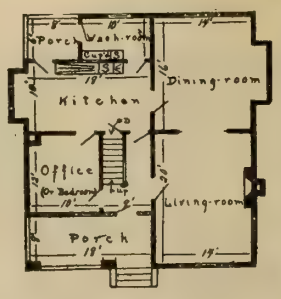
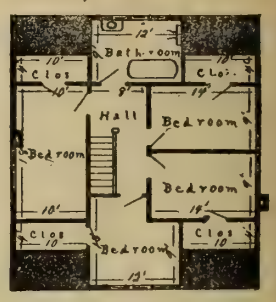


Ground Floor Plan



Layout of Rooms Upstairs.

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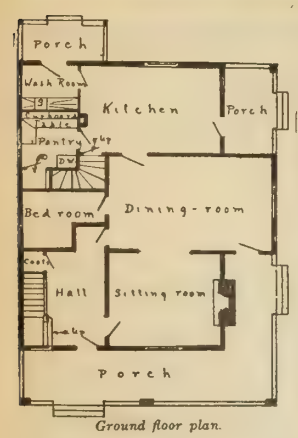
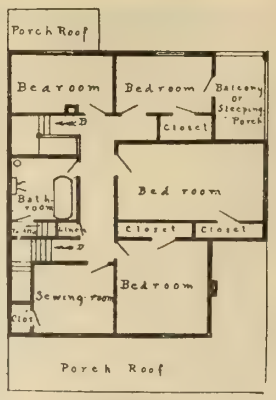


Ground floor plan.



First floor plan.

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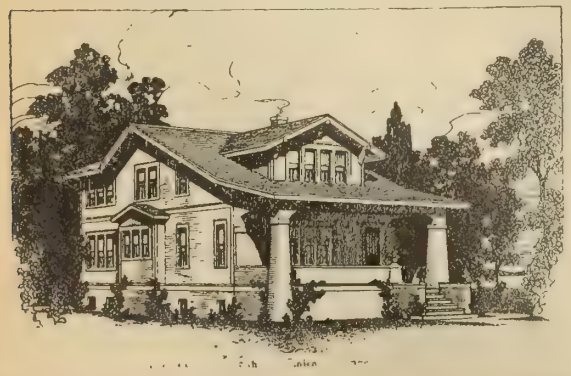
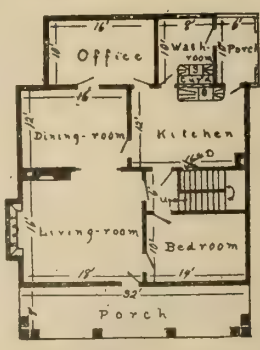
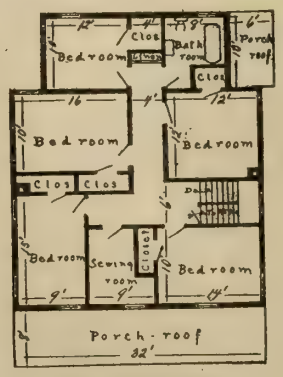


This house was described in the September fifteen issue.—Plans are shown on the lower right hand corner of the page.

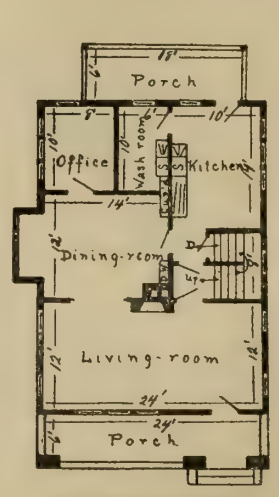


Ground floor plan for house above

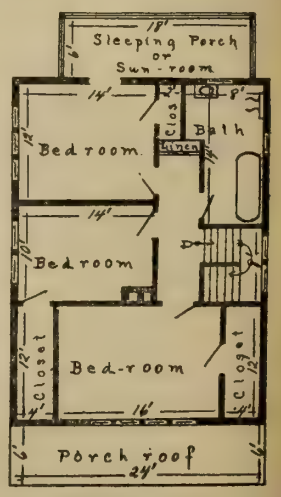


Upstairs plan for house above.

The above house was shown in the September fifteen issue.

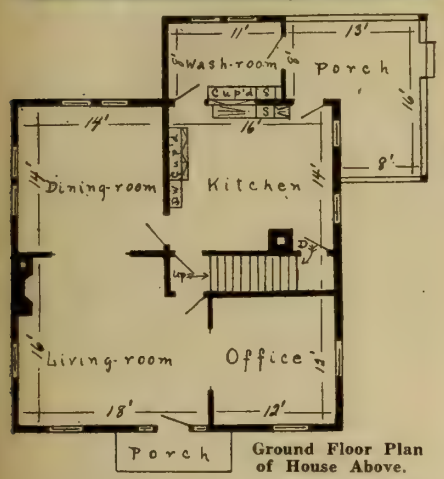


Ground floor plan of house above.

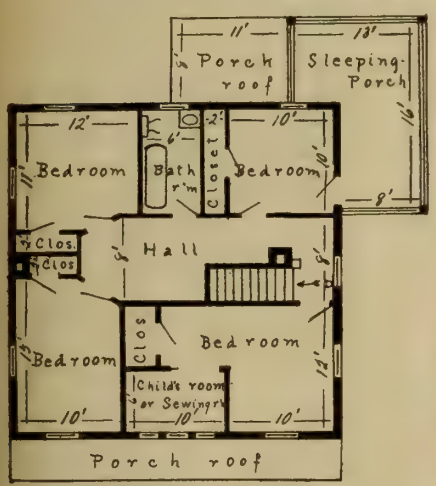


Upstairs plan of house above.

Plans of house on opposite corner of this page. This house was shown in the September fifteen issue.

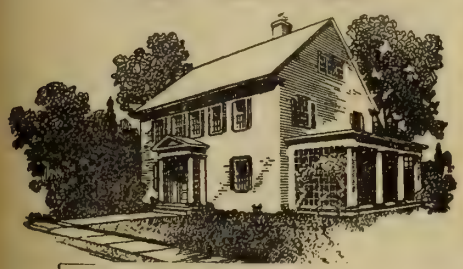


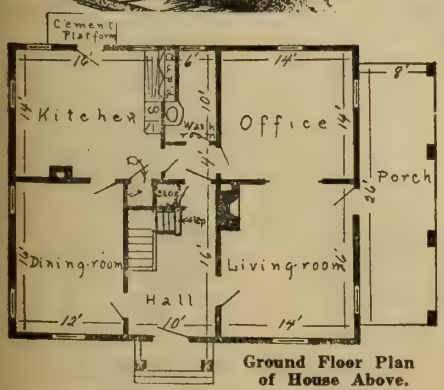
Ground Floor Plan of House Above.



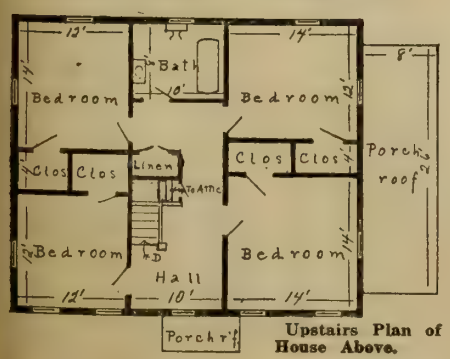
Upstairs Plan of House Above.

The above house was described in the December fifteenth issue.



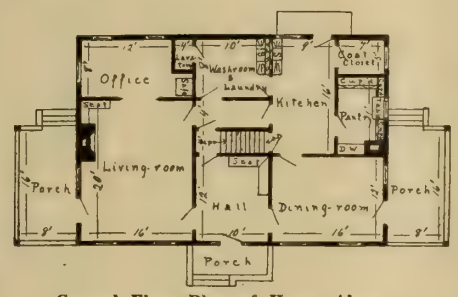


Ground Floor Plan of House Above.

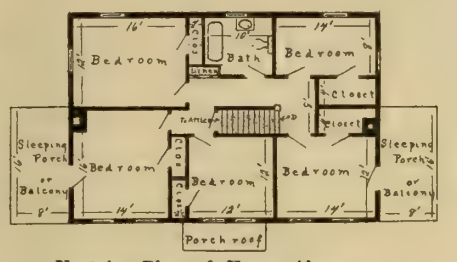


Upstairs Plan of House Above.

This house appeared in Sept. 15th issue.

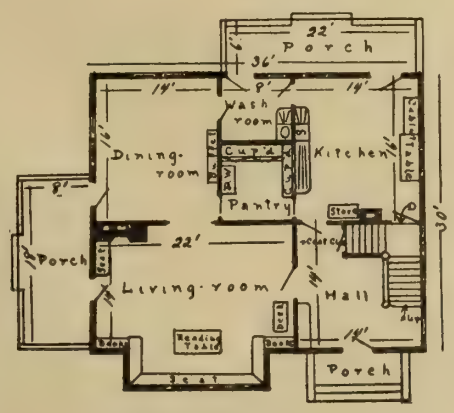


Ground Floor Plan of House Above.

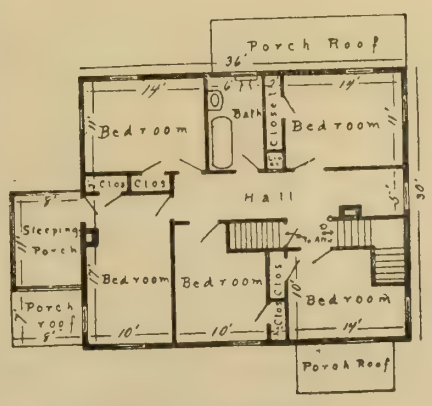


Upstairs Plan of House Above.

The above house was described in the December fifteenth issue.



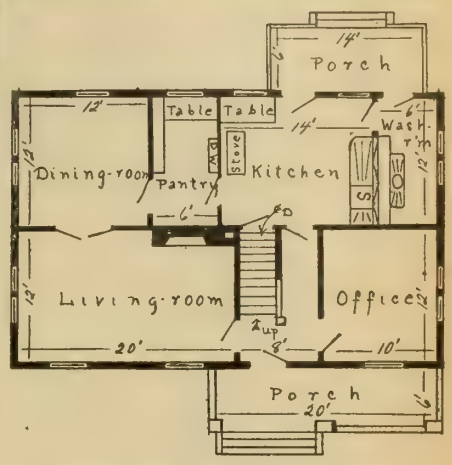
Ground Floor Plan.



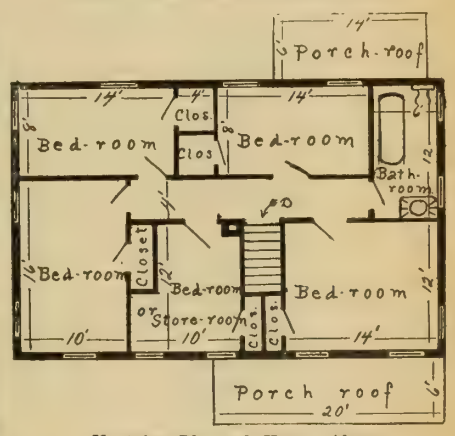
Layout of Rooms Upstairs.

The above house was shown in the August first issue.

We do not furnish blue prints or working drawings of our house plans. The object of the house-building articles appearing regularly in FARMERS' MAGAZINE is to suggest practical, livable, attractive house plans which can be worked out by the local contractor. We are also glad to answer any question from our readers regarding the remodelling of old houses. Send us a sketch of your floor plans as they are, with some idea of the changes you want, and we will try to help you with the rearrangement.

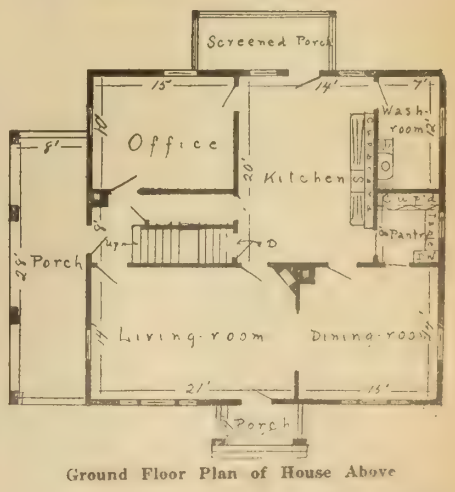


Ground Floor Plan of House Above



Upstairs Plan of House Above.

The above house appeared in the May first issue



Ground Floor Plan of House Above

The above house was described in the September fifteenth issue. The upstairs plan is shown on page 30.

Continued on page 30

ATONEMENT

By W. D. ALBRIGHT

ILLUSTRATED BY MAUDE MACLAREN

Dedicated by the author to the memory of his brother, F. S. Albright, B.A., of Calgary, who fell at Passchendaele, October, 1917, as a private soldier in the Canadian Expeditionary Forces.

A little lad, he played about the farm,
Gentle and gently bred, the scion of God-fearing country folk.

No British blood they claimed. German and Swiss
And Holland Dutch they owned, although
Canadian-bred for several generations—
Save for the father's mother, who, of Prussian birth,
Had come to Canada a little girl, and taught
Her children and grandchildren to revere the Fatherland;
Had trained them gently and had sung
The fine old German lullabies, the rhythmic songs
And folk lore of the Rhine, instilling something
Of the love she felt and cherished for her kin.

Teuton and Saxon comrades was the theme.
Blucher and Wellington were in fond memory twined.
Blood that flows rich and free
Foreswears allegiance but reluctantly.
True-hearted patriots hold the Old Land dear.

But good Canadians they always were,
Schooled in the lore of British history
And all the age-long legacy of British thought,
Inheritors of Magna Charta and of true
Canadian democracy—British to the core.

When war broke out he was in Britain's capital
Upon his wedding tour. There at the world's metropolis
He felt the full calm beat
Of British purpose; attended service in
Westminster Abbey and was stirred with pride to note
The strong, devout and quiet temper
Of the race of England.

Returned to Canada. Resumed his practice—
A rising lawyer in a Western town
With brilliant future beckoning
In his profession and perchance in public life.
Early he grasped the import of the struggle,
Foresaw the prospect of a universal call;
And, though repugnant was the soldier's life,
The thought of carnage and the lust of strife,
The awful hell of war as waged to-day,
He soon resolved to go. But his associates,
Short-manned by many volunteer enlistments,
Were doubly loath to lose his services.
Yet all the while he felt the call of duty,
The rape of Belgium, Serbia's cruel fate,

The Lusitania crime, Nurse Cavell's death
Were stunning blows. To think that Germany
Could thus defile her honor. "This cannot be
"Peace-loving Germany our fathers knew.
"These are demented people, military-mad,
"Drunk with ambition, assuming might is right
"And supplementing might by cunning and intrigue;
"Renouncing treaties, treacherous, false to every trust,
"This menace to the world must be subdued
"By free men's blood, else Freedom perish,
"Trampled beneath the Junker's iron heel."

And still, not British head nor German heart
Impelled him to the fray. It was a larger aim
Than any country. The pulse of human sympathy,
Of Justice, Honor, Truth beat through his veins—
The cosmic soul of Universe, that breaks
Down prejudices and will some day sweep away
The artificial bounds of Empire and of State
And will unite the world in one grand bond
Of brotherhood, in Civilization's cause.

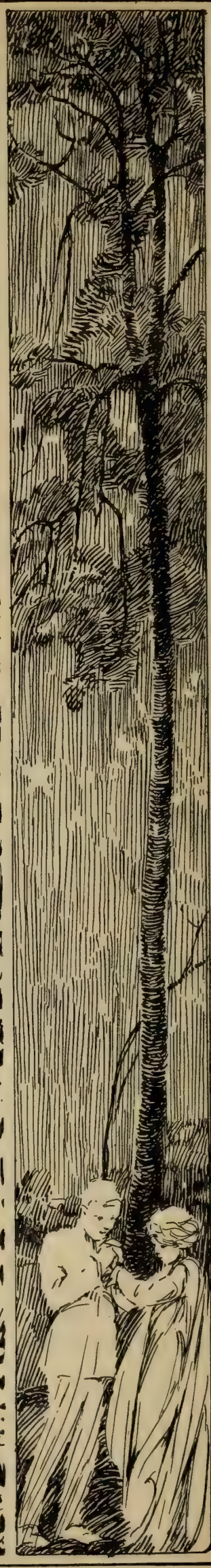
Enlisted in a Western regiment
With private rank. Promoted soon to Sergeantcy,
A splendid factor in recruiting his battalion.
Reverted that he might more promptly draft to France
To fill a gap in gallant Canada's depleted ranks.

He fell in Flanders, killed at Passchendaele
In his first action. All one man could he did
To fight the fight for human liberty,
Atone for Germany's atrocious crimes
And make the world safe for democracy.

He gave his Teuton blood to save the world
From Prussianism. Could Frank or Celt do more?

Nor he alone. Sprinkled throughout the roll of Canada's contingents
Are German names and names of men with strains of German blood
Doing their bit. Duty were easier when sentiment and duty draw
Together. Twice honored who the claims of blood deny.

He sleeps in Flanders, but his memory lives
Resplendent in ten thousand loving hearts.
For none who knew him but admired the man,
His sterling character and nature pure,
And many knew the kindness of his heart
By concrete acts.
In life respected, honored in his death,
Atoned, the honor of the race from which he sprang.
Praise God! Not all is perfidy.



FROM RANCHES *to* FARMS

Watch the Trend of Western Purebred Livestock

By GEO. KAY MILLER

This is a complete summary in a readable form of Western Canada's livestock movements. All breeds of animals are represented in our Prairie Provinces, but there are some startling trends to breeds that ought to make some of us sit up and take notice.—Editor.

Champion Angus three at Chicago.

IN the past fifteen years the rancher—once the lord of the plains—has been obliged to reduce his holdings of horses, cattle and sheep and make way for the plow and the reaper. Simultaneous with this, the man who undertook to raise grain exclusively has found it necessary to increase his livestock holdings somewhat in order to better insure himself against losses occurring in short crop seasons. *Through these two great changes we have made livestock history in volumes, all the details of which cannot find place in an article of this kind. The more important, however, may be noted.*

The past ten years has found Western Canada the most fruitful field for ungoverned livestock exploitation of any part of the North American continent. During this period, money has been circulating more or less freely, and the speculative spirit of our people was at its height. Speaking broadly, anything offered could be sold, and price was too frequently a very minor consideration. The result is that unscrupulous breeders and dealers in Eastern Canada and the United States have shipped within our borders hundreds of head of horses and cattle, and to a lesser number, hogs and sheep which, to say the least, were no credit to the seller, less to the buyer and an *actual setback to the livestock industry of Canada.* This factor has been an outstanding feature of our livestock growth in the Prairie Provinces. While it is a direct reflection upon the intelligence and foresight of our farming population, it is nevertheless a fact. To one who appreciates the cosmopolitan nature of our population the situation is not so surprising. The writer can well remember when, as a young man on an Ontario farm, he found that province almost honeycombed with buyers looking for counterfeit horses, cheap, plain-bred cattle, pedigreed or otherwise, "to ship West." For years the idea has prevailed that anything at all would do for Western farmers, and animals that could not find a market in the East were shipped West. This situation has almost ended, thanks to the many educational influences at work among farmers, such as our agricultural colleges, institute meetings, fairs and exhibitions and the agricultural press. *The demand for high-class livestock seems to be growing out of all proportion to the supply.*

Cattle Raising Versus Wheat Growing

Rather a singular feature of our development has been the slow and very gradual addition of livestock to the grain growing programme. For years the work of our Government officials, the press and college men has been concentrated upon the need for more livestock, more grass crops, more forage crops, more manure, and more bushels to the acre rather than wheat, wheat, wheat, with its resultant effects in reduced soil fertility, increased soil drifting and ever reducing return per acre. They had every argument in their favor except one. which was sufficient to outweigh all others in the mind of the average farmer. He realized, and rightly so, that so long as he could raise a profitable crop of wheat there was much less work in turning that crop into cash than there was in feeding cattle indoors during a long, cold winter and wrestling with fencing, water and pasture problems in summer, and then have no certainty of a profitable market price for his cattle when they were sold. With many the problem of raising livestock was considered as speculative as that of raising wheat.

Unprofitable Wheat Causes a Change

But a change has come, and has come rapidly in the past few years. What has brought it about? Nothing more nor less than unprofitable crops of wheat. Despite war prices for wheat, yields of this cereal in many parts of the West have been very low since war prices have become effective. With more farmers than we can imagine, wheat is to-day considered to be a most risky and unprofitable crop, and once prices again adjust themselves to normal conditions we will hear less of our great wheat areas and more of our great livestock holdings. That the next ten years will witness the fulfilment of this prophecy, there is no doubt whatever in the mind of the writer. *Many a community of farmers who have been engaged in wheat raising are now prepared to spend some money for cattle barns, sheep fences and hog pens and fill these with animals that will return money* each month of the year. It is the most healthy sign on the Western horizon. Ten years of such a programme will find us with less complaint of our drifting soils and low grain yields. Fields will be seeded to grass and manure will be applied to the soil, returning the humus which continuous grain cropping has depleted.

While the above remarks cover the whole Western field in a general way, the provincial situation requires more discussion in detail. While it is customary to discuss conditions in Manitoba, Saskatchewan and Alberta on the same basis, such is very misleading, as each province has conditions peculiar to itself.

Each Province Has Its Troubles

Manitoba is the oldest province of the three and farming conditions there are possibly on a more stable basis than in the other two. Saskatchewan is a province of wide expanse, with very widely differing conditions of soil and climate. The same is true of Alberta, but being adjacent to the mountains it has many advantages over Manitoba and Saskatchewan for the raising of livestock. Each province has its separate livestock organizations intended to develop the industry within its borders. Each Government of these provinces has outlined its policy for livestock improvement, consequently there is little in common between the three. The one organization in which all four Western provinces are united in policy is in support of the Western Canada Livestock Union, an interprovincial plan of co-ordinating effort to place the livestock industry of Western Canada on a better basis. The secretary of this organization is E. L. Richardson, Victoria Park, Calgary. The president is Dr. Tolmie, Victoria, B.C., who was elected in January, 1919 to succeed Dr. J. G. Rutherford, Calgary who has taken a position on the Railway Commission of Canada.

Lady Jane, one of the type of Ayrshire cows that made records.

Manitoba's Livestock Policy

The Government of Manitoba has outlined three policies for the encouragement of the cattle breeding industry within the province. To struggling settlers in the newer sections of the province the Government will supply cows, up to five in number, to each settler, where ten neighbors will jointly apply for same and be jointly responsible for all payments. Liberal terms are extended under the provisions of "The Winkler Cow Bill," and the plan has apparently proven satisfactory. Over 2,500 cows have been distributed, and the natural increase since the inception of the scheme in 1916 has brought the total number up to over 4,000 head.

On account of the opportunity to select choice breeding stock in the Union Stockyards, Winnipeg, the Government has offered credit to *bona-fide* farmers who purchase such heifers for breeding purposes only. The terms are ten per cent. cash; the balance in three equal annual instalments at 7 per cent. This plan has resulted in thousands of good heifers going to Manitoba farmers in 1918. A similar plan of encouragement is offered to farmers to buy stocker steers in the stockyards and finish them for market. These plans are in direct charge of W. W. Fraser, livestock commissioner for Manitoba, stationed at Winnipeg.

A provincial horse, cattle, sheep and swine breeders' association is organized in Manitoba, the secretary of all these being W. I. Smale, Brandon, Man. Mr. Smale has done valuable work among the breeders of the province in linking up the work of the organizations with the provincial exhibition at Brandon, of which he is also secretary and manager.

Taking the livestock industry of Manitoba as a whole, the following table will indicate the comparative growth since 1906. The figures for 1918 were

A show herd of Herefords at home. The whitefaces are growing in favor in Canada.

obtained under a different system from those of previous years, and while they are considered to be more accurate, they are not actually comparable with those of previous years.

Manitoba's Live Stock

Year	Horses	Cattle	Sheep	Swine
1906	164,444	863,202	16,606	120,838
1911	251,572	407,611	87,227	192,386
1916	341,496	665,686	89,475	261,774
1918	384,772	746,899	136,782	284,596

No statistics are available on the pure-bred livestock industry in Manitoba, but it is known to have enjoyed an equally healthy growth with the grade stock. In cattle the Shorthorn finds Manitoba its stronghold. Over 200 breeders within the province are members of the provincial Shorthorn Club established about 18 months ago. Andrew Graham, Pomeroy, Man., is president and J. B. Davidson, Myrtle, Man., secretary. The Canadian Aberdeen-Angus Association has its secretary's office in Brandon, and this breed is rapidly increasing in popularity through the remarkable success of J. D. McGregor, Brandon, in placing the breed in the front rank as beef cattle. The Hereford is also gaining ground in Manitoba, the large cattle owners in the northern part of the province favoring this breed for the range.

That the Percheron horse is so good-natured on the farm, is one reason why he is coming in so fast. See statistics on another page.

Clydes and Percherons in Manitoba

In horses, Manitoba finds the Clydesdale and Percheron almost equal in popularity, but the former having decidedly the larger number of breeders. A great demand exists in this province for high-class sires, due possibly to the elimination of many misfits through the application of the provisions of the Horse Breeders' Act of 1915, which prohibits grade horses and unsound pure-breds from standing for public service.

Manitoba is on the verge of a great boom in sheep raising and both pure-bred and grade sheep of merit will find a big market in that province. The breeds rank in popularity about as follows: Oxford, Shropshire, Suffolk, Hampshire, Leicester and Southdown.

Saskatchewan's Livestock Policies

The problems of the rancher and the farmer present themselves in Saskatchewan, making special conditions necessary in legislation and administration. This province is also peculiarly situated in the matter of stockyard and packing house accommodation. *For some reason or other, Saskatchewan has had no large stockyard nor abattoir in the province up to the present time, but it is officially announced that before the end of* 1919 *such will be provided at Moose Jaw and Saskatoon* under Government assistance and supervision.

Possibly no Government in Canada has adopted a more business-like policy of assisting the livestock industry provincially than has Saskatchewan. Terms are provided whereby any farmer belonging to an agricultural society or grain growers' association may, on endorsation of the executive of such body, secure cattle, sheep or hogs, pure-bred or grade, on part cash and part credit basis at 6 per cent. These terms are outlined at length under the Purchase and Sales Act, which became operative in 1914. It provides for a sum of $500,000 to be expended in livestock development work. Up to the end of 1917 a total of 452 pure-bred bulls, 60 pure-bred cows, 2,860 grade cows and heifers, 7,513 sheep and 283 swine have been distributed to a grand total of 1,344 farmers. This work was greatly extended in 1918, and these figures will be greatly increased.

A. M. Shaw, B.S.A., has been livestock commissioner for Saskatchewan for the past year, succeeding P. F. Bredt, B.S.A. Prof. Shaw has recently gone to the Saskatchewan University as professor of animal husbandry and his successor has not yet been appointed. The following table of livestock growth in Saskatchewan is considered to be most accurate for the year 1918 under the new system of compiling statistics, but they are not actually comparable with previous years. This is also true of the statistics of the other provinces given in this article.

Saskatchewan's Live Stock

Year	Horses	Cattle	Sheep	Swine
1906 ...	240 566	472.854	121.290	123.916
1911 ...	507,400	633.612	114 216	286 295
1916 ...	841,907	1,011,393	124,237	530,727
1918 ...	1,000,076	1,279,331	134,177	521,240

There has been a most substantial growth in pure-bred herds and flocks in Saskatchewan in recent years. In cattle, Shorthorns lead, with Herefords and Aberdeen-Angus following. The Clydesdale horse can claim premier position in the province with the Percheron and Belgian close in line. Saskatchewan has a provincial Shorthorn Club, of which H. Follett, Duval, is secretary. J. Duggan, Condie, is secretary of a thriving Clydesdale club, and a Belgian Horse Breeders' Association has also been formed. The incoming livestock commissioner will doubtless be secretary of the various provincial livestock associations, as his predecessors have always handled this work.

The northern portion of Saskatchewan is experiencing a remarkable development in livestock population, the abundant pasturage and flowing streams of fresh water having attracted much interest in cattle and sheep raising, and the policy of the Government has provided ways and means of getting started in the business.

Alberta's Livestock Policy

In many particulars Alberta is destined to become the premier livestock province of Canada. Nature would seem to have made it possible. In four main essentials, climate, feed, water and shelter, we find all harmoniously combined to make an ideal livestock province. Alberta has over 30 types of grass growing within her borders, from the shoulder-high slough grass to the bunch grass of the foot-hills. To see the results of pasturing these grasses or feeding them as hay is to marvel. The province has scores of great cattle feeding plants where large ranchers, packing companies and farmers feed cattle out of doors all winter on hay alone. Not only do they make rapid gains but finish into prime beef without any grain. Sheep, horses and cattle roam the plains in winter and thrive wonderfully. The periodical chinook does not permit the snow to lie long on the ground at one time, and in periods of heavy snowfall, hay is fed to sheep and cattle. Time was, not so long ago, that the putting up of winter feed was not considered a part of the rancher's annual programme. He just took his chances of losing a few dozen head of cattle or sheep. But the severe winter of 1910-11 played such havoc among the herds and flocks of Alberta that feed has since been put up regularly. The rapid increase in values of cattle and sheep has convinced the average rancher that a few hundred tons of hay is splendid insurance against serious loss. Alberta is blessed with scores of fresh water streams in all parts of province.

The following table shows the growth in livestock population in Alberta during the past five years, which is a fair criterion of growth during the five previous years. Alberta has witnessed a healthy, though somewhat irregular growth in animal industry.

Alberta's Live Stock

Year	Horses	Cattle	Sheep	Swine
1914 ...	609,125	1,081 881	501.188	750.789
1915 ...	620,000	1,125,000	525,000	400,000
1916 ...	621,200	1,148.024	639,100	440.310
1917 ...	718.317	1,535,315	276 966	730 237
1918 ...	791,246	1,991,582	332,179	601,534

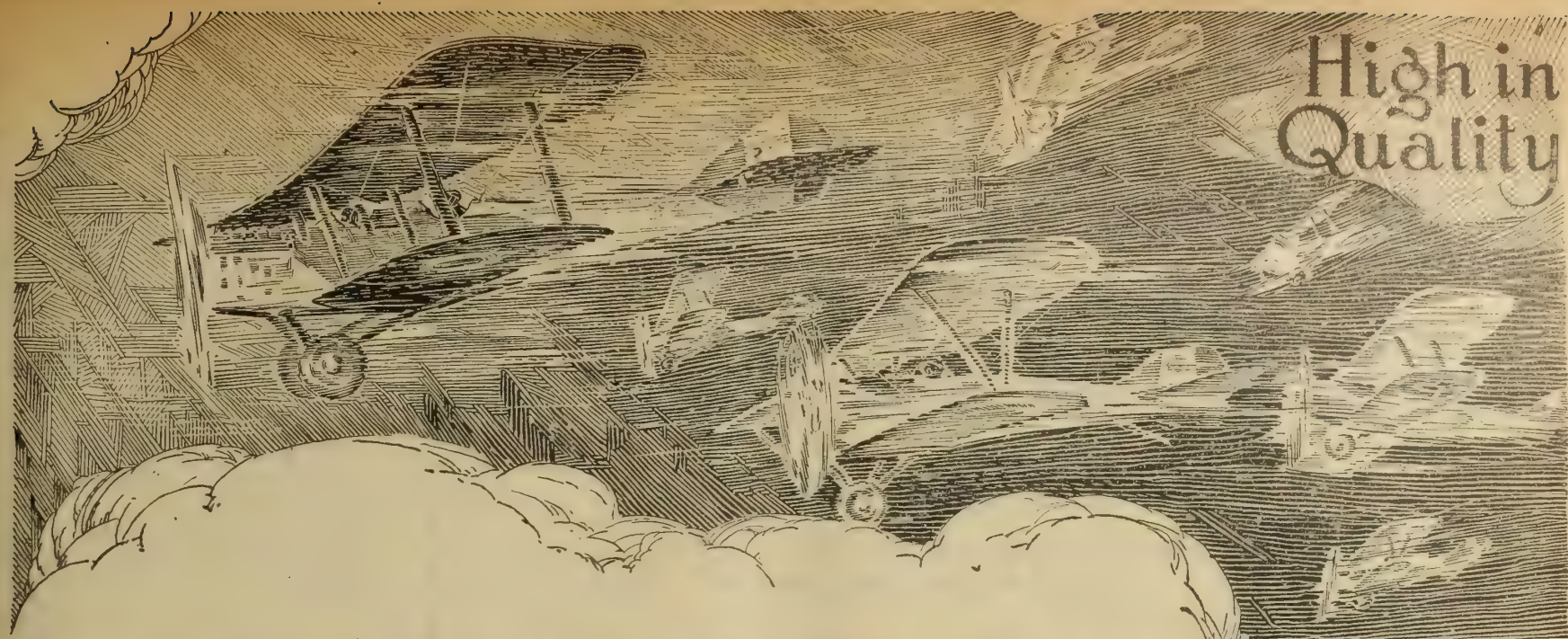
Alberta has two complete livestock associations, one centred in Calgary, of which E. L. Richardson is secretary, and one in Edmonton with W. J. Stark, secretary. All are enjoying a remarkable growth, and interest is increasing in corresponding proportion to the importance of the industry. The policy of the Provincial Government is strongly in favor of livestock production. Hon. Duncan Marshall and his deputy, H. A. Craig, are most enthusiastic livestock authorities, and the livestock commissioner, W. F. Stevens; the demonstration farm superintendent, S. G. Carlyle, and all others in the livestock branch are unceasing in their efforts to place Alberta livestock husbandry in the front rank in Canada.

Revelonta's Choice, Clydesdale colt, a winner at the International by a Canadian firm and sold to Western Canada.

Herefords Ahead in Alberta

The pure-bred livestock development in Alberta has been remarkable. In this particular, possibly the Hereford can claim first position. A number of men of means have got behind the Hereford in Alberta and are stopping at nothing in the way of prices to get the best the breed has to offer. The result is that Frank Collicut, Calgary, bought the 2-year-old bull, Gray Lad 40th, in the U.S. at $12,900, and was followed by G. E. Fuller, Calgary, who paid $17,000 for Martin Fairfax, a three-year-old bull. W. H. Curtice moved to Alberta from Kentucky and brought with him a 2-year-old bull, Beau Perfection 48th, that was successful in winning over the other two in 1917. Not willing to be outclassed, Mr. Collicut brought in Gay Lad 16th from the U.S. at the record price of $20,000, and has so far defeated all comers in the show ring. This galaxy of bulls will make Hereford history for Alberta in the next ten years. The Hereford is very popular in Alberta, there being over 100 breeders in the province. Mr. Collicut has the largest herd of pure-bred Hereford cattle in

Continued on page 50



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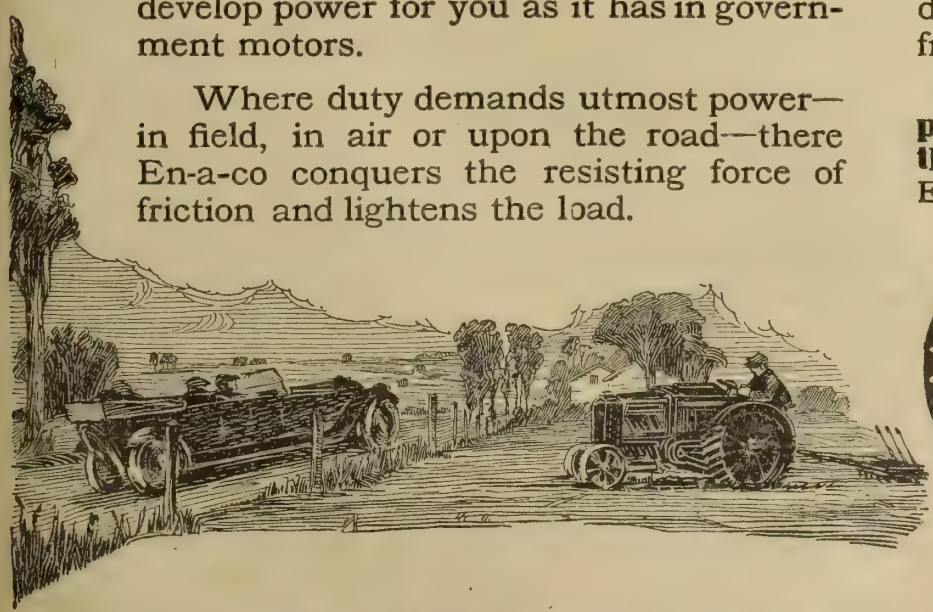
Buy of your local dealer if he has En-ar-co products in stock. If he cannot supply you, then mail your order direct. But do not fail to try En-ar-co at once.



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Unity–Stability–Prosperity

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Canadian Reconstruction Association

Its National Programme is:

1. To support a tariff adequate to develop Canadian industries and to ensure employment for Canadian workers.
2. To create a good economic understanding between East and West and to show the necessity for industrial stability in order that excessive taxation may not fall upon farmers and workers.
3. To co-operate in movements to increase agricultural production and improve rural conditions.
4. To maintain national credit and to encourage investment in Canada.
5. To stimulate the development of national resources, to promote the utilization of Canadian raw materials, and to encourage final process of manufacture in Canada.
6. To develop domestic and foreign trade and to promote necessary industrial organizations.
7. To facilitate the adaptation of war industries to peace conditions and to ensure employment for war veterans and war workers.
8. To improve the relations between capital and labor and to emphasize the advantages of consultation and co-operation.
9. To encourage scientific research in the interests of Canadian producers and manufacturers.
10. To improve the economic and industrial position of women.

The Canada that has been saved by sacrifice and valor must not be destroyed by rash legislation. National Prosperity Depends on Industrial Stability.

The Canadian Reconstruction Association urges wise and prudent treatment of Reconstruction Problems.

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LIVE STOCK NOTES

The annual meetings at Toronto and Montreal were well attended by breeders.

The Shorthorn, the Clydesdale and the Holstein breeders have the largest bank accounts.

The Holsteins will retain their old name for another year at least, although the British society suggested that they change.

Prof. Cummings, of Nova Scotia, told the Holstein breeders of the value of O.P.V. silage, that is oats, peas and vetches.

Mrs. Brodie, of the United Farm Women, addressed the Holstein breeders at their banquet and introduced a new note at such gatherings.

Hon. Mr. Henry attended a few of the breeders' meetings, but his main work was in North Ontario bye-election.

Hon. T. A. Crerar rose to the occasion at the livestock banquet.

Henry Glendenning of Manilla, told the Jersey breeders why the Dairy Standards Act was not enforced. He charged Holstein men with holding back the enforcement.

Dr. Torrance warns breeders in Canada to watch for a possible introduction of foot and mouth disease in Canada by the returning soldiers.

It is likely that the ban against importation of cattle from the Channel Islands will be removed.

C. F. Bailey, having returned from England, says he was surprised to find that British livestock had been impaired so little.

The embargo against cream exportation to the States is being removed, it was announced.

Ontario cattle breeders were not out in large numbers to their annual meeting.

Geo. Pepper was out after the freight and express rates at the meeting of the Eastern Livestock Union.

Secretary Clemons, of the Holstein, was complimented many times on his good work during the year. His salary was fixed at $3,000.

Association cars of purebred livestock that went west last year carried 161 Shorthorns, 6 Jerseys, 41 Angus, 10 Holsteins, 28 Herefords, 3 Ayrshires, 1 Galloway, besides 67 horses, 180 sheep and 4 pigs.

Prof. A. Leitch was responsible for the motion at the swine breeders to place an import duty of $100 on Berskshires coming into Canada. It is claimed that the American breeders are acting rather high-handed in the matter of reciprocity of registrations.

Hon. Mr. Henry announced that there would likely be some action shortly against the scrub bull.

Sheep breeders discussed ways and means to meet the menace of Australian frozen mutton coming into Canada.

President Stonehouse, of the National Dairy Council, is hopeful that the move to increase express rates is stalled for a year.

Clydesdale men are to be congratulated on the little start to advertise their breed by using a story of a notable Clyde gelding.

Percherons are getting into favor fast in Canada, and a glance at the registration gains in Canada will be news to many.

The Ayrshire breeders at Montreal held a banquet.

Wm. Hunter is in Scotland scouting for Ayrshires at present.

Dr. Tolmie, M.P., of Victoria, presided at the Holsteins. He claims a big market ahead for dairy products.

Dr. Tolmie said they had caught a 1,000 whales on the west coast this year and most of them were used for fertilizer. "And believe me," he said, "they have nothing on the skunk."

Basic slag is used on old pastures in Nova Scotia and they find their value wonderfully increased.

In 1901, Canada ate 4.61 lbs. cheese per head per year, and in 1916 this had dropped to 1.7 lbs., the decrease keeping step with the increase in price.

G. Baldwin, of Coaticook, Que., complained that farmers are not allowed to export cream, while at least three U.S. firms could buy and export. Had he been able to ship 41 miles farther along the same railway line he would have received $22.40 per can instead of $17.10 as a result of the difference between the two markets. The three U.S. firms could come in and buy at Canadian prices and sell in their own market at the higher level; but farmers could not ship direct. This situation was an inheritance from the Food Board and its butter commandeering order. He classed the Food Board as "an abortion of the late marriage of the Liberal and Conservative parties at Ottawa."

SOME CUES IN THE CHICKEN BUSINESS

Continued from page 10

in registration depending upon the position of the thermometer.

Turning the Eggs

From the night of the second day to the morning of the eighteenth day the eggs are turned twice and cooled once daily. The time required for the cooling of eggs depends upon the temperature in the incubator room, and the number of days the eggs have been incubated. Less time is required during the early part of the incubation period than during the latter. Probably the most dependable method of judging whether the eggs have been cooled enough is to apply one to the eyelid. If they have not been cooled long enough the egg will feel hot to the eyelid; if cooled too long there will be a sensation of chill; when they have been cooled just right the eyelid will not feel any unusual sensation.

Testing the Eggs

Eggs are generally tested twice during the period of incubation. The first test is to remove infertile eggs and at the second test dead germs are eliminated, so as to prevent the impure gases being absorbed by the living embryos. In hot weather it is sometimes advisable to make another test about the eighteenth day. Probably the quickest method of testing eggs is to use a frame the same size as the egg tray, supported on four legs about waist high; resembling a kitchen table without the top. In a darkened room a tray of eggs is placed upon the frame and an electric bulb or pocket torch is moved about beneath the eggs in such a manner that the light comes directly under each egg. With a little practice it will be quite easy to distinguish between fertile and infertile eggs, also between living and dead germs. By this method, only defective eggs need be handled, instead of having to pick up each egg and hold it before a lamp, as in the old way.

At the fourteenth day and at "pipping" time there is usually a jump in temperature in the egg chamber, caused by the increasing animal heat. It is well to be on the lookout for this so as to lower the flame or remove the lamp in case the regulator cannot take care of the increasing heat, a condition which sometimes exists when there is an extra good batch, and where incubators of the large sizes are used. When the batches are at their best it is sometimes necessary to remove the lamp for several hours, but unless the temperature rises above 105° it is not advisable to open the incubator doors while the chicks are wet. The ventilators may be opened if they are panting badly, but generally it is desirable to conserve the moisture at hatching time. Sometimes a chick or two get worked down between the egg tray and the glass on the door, and appear to be dead. If the glass is tapped with the finger nail the little rascals will wake up to see what is wanted. When the batch is all over and the chicks are "fluffed up," the egg trays should be removed and the chicks left on the incubator to harden off. The temperature should be such that they neither pant nor "pill," and with the ventilators open they will take no harm for a day provided the glass door is darkened to prevent them becoming too inquisitive concerning the outside world and crowding towards the light.

With everything in readiness for their comfort the "babies" are moved to the brooder on the twenty-second day. The incubators are again cleaned out; egg trays are scrubbed, clean burlap tacked on the chick tray, a new wick in the lamp and heat is got up for the next batch.

Artificial Brooding

In order to form some idea of the basic requirements of artificial brooding it is perhaps best to first observe the conditions existing in the natural process. In the case of chicks brooded by hens we have two important factors for consideration: That the chicks can get the precise degree of warmth that is necessary for their comfort at any time, and: that they are supplied with an abundance of fresh air. Therefore it may be said that a brooding system that possesses these qualities is good, and contrawise, one that does not possess them is bad. It is desirable that a brooder should provide a steady graduation of temperatures, rather than several distinctly defined temperatures, so that the chicks may find a position exactly suited to their needs during any stage of the brooding period, instead of being compelled to choose between one compartment that is too warm and another that is too cool. The first thing a newly hatched chick learns is a sense of location of warmth, which is to be expected, since the growing embryo has been subjected for twenty-one days to a temperature of over 100 degrees. If they are appealed to intelligently, the little fellows can learn a lot about their job in a very short time. During the first two or three days in the brooder, they should not be allowed to get so far away from the source of warmth that they cannot feel its attraction, although it is very desirable to get them outside as soon as possible; they must first learn where to get warmed up quickly. Relatively, a day-old chick allowed to wander ten feet away from the warmth of a brooder is equivalent to a six-months-old child being allowed to crawl half-a-mile away from home. If chicks are allowed liberty gradually much of the trouble usually caused by crowding will be averted. Crowding simply means that the chicks have strayed too far from the warmth, and having not learned their way back, they feel the warmth of another chick's body, so they begin huddling together, often with discouraging results. If they acquire the habit of crowding or "piling," they should again be confined to the warmth for a couple of days, when the absence of the need of crowding will cause them to forget about it and they may then be given their freedom again.

Feeding Brooder Chicks

There are all sorts of theories and systems of feeding brooder chicks. Boiled down, the proposition amounts to this: They must have the frame before they can carry the flesh. Therefore the feed during the first few weeks should contain a large proportion of bran, which should be kept constantly before them; also they should have access to granulated bone and charcoal. *Complicated feeding formulas are not desirable.* It requires a little more care to feed early-hatched chicks that are kept indoors than it does the later ones which get outside soon after they are hatched, these former being entirely dependent upon the discretion of the attendant regarding the suitability of their food, while the latter are able to correct any errors in rationing by selecting food from the ground outside. Perhaps this explains why leg weakness in brooder chicks usually disappears after they get outside. *There is an opinion that it is caused by board or cement floors, but possibly the cause may be attributed to improper feeding.*

Leg Weakness

In support of this contention an instance may be cited where a majority of a flock of over two thousand early-hatched chicks all indoors went off their legs and the trouble disappeared after reducing the proposition of heavy feeds, especially corn. Where it is necessary to induce rapid growth, as in the case of early broilers, the corn had better be cooked in a johnny cake, in which form it is more easily digested. If chicks are well hatched from good parent stock, and the brooding system correct in principle, they will do well on a simple ration. On the other hand, the most carefully calculated and so called "scientifically balanced" feeding will never compensate for unfit parent stock, careless incubation and improper brooding methods. Chicks can be well started by placing an open shallow box of bran before them and feeding flaked oats (domestic quality) on a flat board, with a sprinkling of bran, every two or three

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If you have any use for a cream separator, it's only a question of time before you buy a De Laval

Many buy a De Laval to start with and so avoid a lot of "separator grief."

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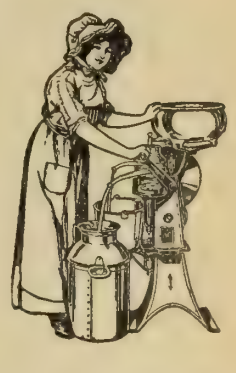
That's why, in the older dairy sections where separators have been in general use for many years, you'll find most of the machines are De Lavals.

"Claims" don't mean much to such farmers. They've had lots of separator experience. "Performance" means a thousand times more to them than claims.

They've watched the De Laval "perform" for several decades. They know that it is reliable and they stick to it, just as does the creameryman who is also "separator wise."

Why not be guided by the experience of these men and buy your De Laval "Sooner" instead of "Later?"

Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.



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The dotted lines show the shoulder movement of a horse—how the Lankford moves with instead of against muscles.

Watch the movement of ordinary collars as horses strain at the traces. At every step you'll notice they rub against his shoulders. That constant chafing, combined with sweat, is the reason why horses get galled. This fault is overcome in the

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Instead of opening at the top, the Lankford is made with an open throat that gives pulling muscles full play. Moves with the shoulder muscles, instead of rasping against them. It cannot gall or sweeney.

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The Lankford is made of closely woven army duck, like a surgical bandage—stuffed with soft, springy cotton fiber. This fiber will not hold heat—absorbs sweat and impurities from sores. Keeps shoulders dry.

Made in sizes to fit any horse—heavy leather bearings and line leathers. Often lasts three or more seasons. Costs about one-fourth as much as leather. Millions used every year.

The Lankford is guaranteed to heal sore shoulders while they work. If dealer cannot supply you, send $2.50 (state size wanted), and we will ship you a collar, charges prepaid. (9-2c)

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You need an ensilage cutter of your own. The Toronto Ensilage Cutter is of a new and better design. Runs smoothly and lightly, without clogging or other trouble.

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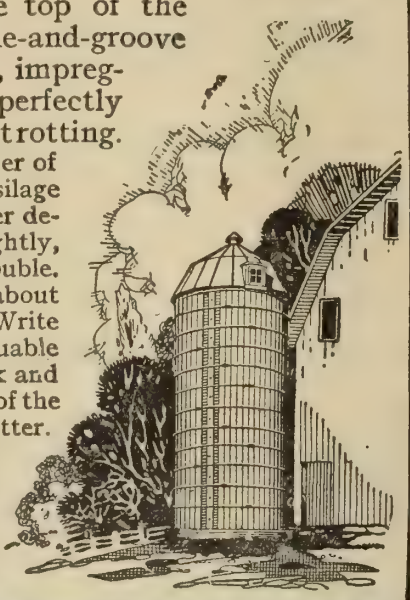

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hours for the first week. A fount of sour skimmed milk, and another of fresh clean water, should always be accessible. "Soakings" and drownings result from crowding at the drinking fount after it has been empty too long. Cracked wheat and pin-head oats, half-and-half, are sprinkled on the feed board for a day or two and when the chicks have become accustomed to them they may be fed in the litter.

After the first week ten per cent. of sifted meat scrap is mixed with the rolled oats, which is then kept before the chicks in an open box or hopper. It is advisable to replenish the feed boxes frequently rather than to take the risk of feed becoming soiled. Intestinal disorders spread rapidly as a result of chicks picking particles of soiled food. The more chicks there are in a brood the greater the necessity for frequently changing the litter.

Chicks and Green Feed

Young chicks eat a large amount of green feed. It is well to get them started eating it early. They will do this if it is chopped fine and sprinkled over the flaked oats on the feed board. A dash of clean grit and charcoal should be used with each feed. The latter is useful in aiding digestion, especially when chicks are confined indoors. A shallow box of fresh earth is also good, but it should be changed daily.

When the chicks are three weeks old, small cracked corn may be added to the scratch feed about one-third by weight. Also corn-meal is mixed with the flaked oats and meat scrap, starting with about fifteen per cent. A larger proportion of corn may be fed when the chicks are getting plenty of outdoor exercise than when they are confined to the brooder house. *It is possible to avert a good deal of loss by trying to see things from the chicks' viewpoint.* If the appearance of their surroundings is suddenly changed it is quite likely that they will become confused, often resulting in serious loss caused by crowding, or by chicks not finding their way to the brooder and becoming chilled. A man who had over a hundred fine chicks growing nicely decided to move them to a colony house in a field. They had been accustomed to enter the brooder house by ascending a mound of earth and sod, but the approach to their new home consisted of an inclined board upon which were nailed little cross slats for foothold. The owner became disgusted with the business because he found a pile of dead and chilled chicks huddled *beneath* the inclined board the first night in their new quarters. It goes to show that a little interest in the brooder chicks' problem will go a long way in helping supply the world's demand for eggs.

Changing to Colony House

After the chicks are finished with the brooders there is sometimes a little danger from "piling" on cool nights in summer. It is usually because they have not been taught to go on the roost; three two-by-fours laid flat and resting upon cleats nailed about ten inches from the floor; one twelve-inch board on edge fastened in front so as to prevent chicks getting underneath. Place chicks on this shelf at dusk for two or three nights. After they have become accustomed to going on alone, separate the perches gradually. Later they may be turned on edge, corners planed off and held in position by fencing staples at the ends.

Red Mites at Home

A good housewife, expecting company, prepares for her guests before their arrival. The same rule may well be applied to the poultryman and red mites, especially if the chicks occupy a new building. Red mites love a new pine board—a million will make themselves quite at home in a few days. If you prefer that they pay a brief call rather than take up permanent residence, take six quarts of kerosene (coal oil), dissolve in it one pound of naphthaline flakes (powdered moth balls), paint all the floor and about eighteen inches of the walls, before the chicks are put in the house. If the building is new, two thorough paintings will be required the first season, after that one good application a year for the house and two or three for the perches will keep away the unwelcome "company." When the sexes of the chicks can be distinguished, and provided they are through the brooders, it is advisable to segregate the cockerels and after selecting some of the best developed ones to be retained for breeders the remainder should be kept in limited yard space and fed for market as heavily as they will stand.

Train to Respond to a Call

Broilers of the light breeds make most economical gains up to two pounds, while the heavier breeds can be profitably fed to a larger size, provided market prices are not declining too quickly. Where brooder chicks are raised in large numbers *it is desirable to train them to respond to a call or whistle,* so that they may be attracted to their homes in case of an impending thunderstorm or other dangers.

After the young pullets have learned to return at night to the proper place, and to go on the roosts, there will be little or no trouble. A hopper of dry mash, always accessible, consisting of equal parts by weight, of wheat, bran, middlings, ground oats, meat scrap and corn-meal, with a feeding twice daily of mixed grains, of which nearly one-half is cracked corn; plenty of cool, fresh water and regular cleaning of the house will keep them growing. When they begin to comb up in the autumn they should be got into winter quarters and fed liberally on grains. It is advisable not to feed stimulating mash mixtures until they have become accustomed to the new quarters if they are to be confined during the winter. If the mash is fed dry in hoppers and the pullets are given all the grain they will eat, they will not eat heavily of the mash until they commence laying, but will flesh up on the grain.

There will probably be an occasional accidental death, or a scrub or cripple to be put out of business, but by this time results should be sufficiently encouraging to make you want to stay in the game.

FIGURES AND FACTS FOR IMMEDIATE REFERENCE

Quantity of Seed Required to Plant per Acre

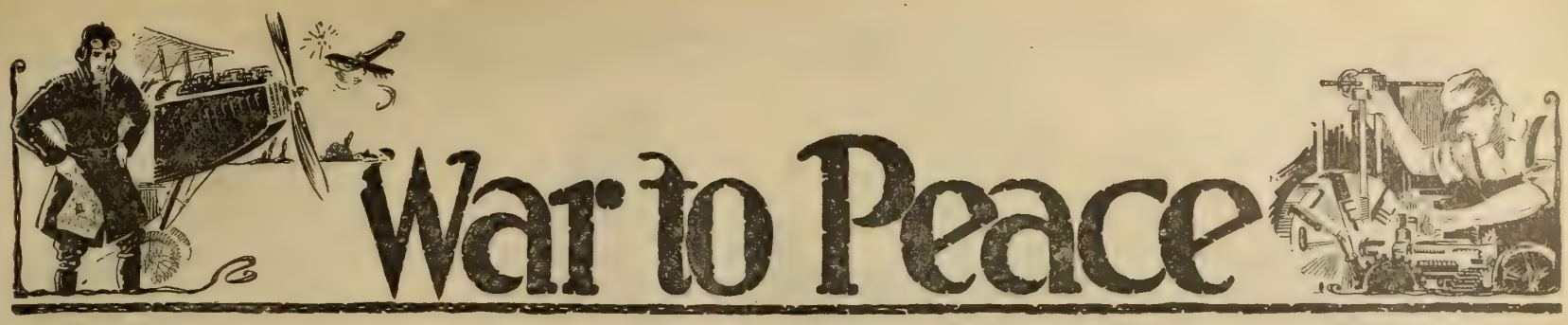
	Drilled Peck.
Wheat	6 to 7
Oats	6 to 11
Barley	6 to 8
Rye	5 to 8
Buckwheat	4 to 5
Peas	8 to 16
Beans	2 to 4
Flax	2 to 8
Millet	1½ to 3
For Hay—	
Peas	.. 4
Oats	.. 8
Corn	¾ to 2
Potatoes ....bushels	8 to 25
	Pounds
Red Clover	10 to 12
Alsike Clover	5 to 8
Sweet Clover	12 to 25
Alfalfa	15 to 20
Timothy	6 to 12
Rape (drilled)	1 to 2
Rape (broadcast)	4 to 5
Clover and Timothy Mixed—	
Clover	.. 7
Timothy	4 to 5
Turnips	2 to 8
Mangels	5 to 8
Sugar Beets for Sugar Production	.. 15

When sowing cereals broadcast an increase of about 1 peck per acre is needed.

GRASSY LAKE, ALTA.

Please find enclosed three dollars for renewal of the FARMERS' MAGAZINE *and one dollar for three months' subscription to the Financial Post. I will call your attention to the spelling of my name as I have not received the Magazine at all regular this last year. It has been sent in the name of Rudwick instead of Hunwick, but I hope the man that used to take it out of the post office will become a subscriber for it as he must have found it a very interesting book to read, the same as I do, or he would have said that it did not belong to him when he saw the name on it. I have found it the most interesting and best farm paper that I read, so please send it on.*

J. HUNWICK.



Land and Loans—To Help Soldiers Become Farmers

The Government has been developing a programme that includes the provision of land, the granting of loans, and the training and supervision of those inexperienced in farming.

The Present Plan.

Under the Soldier Settlement Act, 1917, an eligible returned soldier is entitled, in addition to his ordinary homestead right, to a free grant of one quarter-section of Dominion Lands on homestead conditions.

For this purpose the Government has suspended homestead entry by others than soldiers on all remaining homestead lands in the Western provinces within fifteen miles of railway transportation, pending enquiry into their suitability.

As soon as a soldier goes on the land, the Board has power to grant him a loan up to the maximum of $2,500.

This loan is granted to settlers to help them acquire land for farming, discharge incumbrances, undertake improvements, erect buildings and secure necessary livestock, machinery and equipment.

The New Proposal.

The Government have found it necessary to broaden these original plans for the following reasons: (a) It has been found that only a limited amount of suitable homestead land is available for soldier settlement; (b) Some Crown lands are held by the Provinces; (c) Homesteading may not suit all the returned soldiers.

It is now proposed that the Provincial Governments co-operate with the Soldier Settlement Board in acquiring suitable lands at present held uncultivated by private owners. The Dominion Government has announced its intention of introducing necessary legislation along these lines at the opening of the next Session.

The lands so bought will be resold to the soldier at cost price. It is suggested that the purchaser be required to make a cash payment of one-tenth of the purchase price. The balance will be payable in equal annual instalments extended over twenty years or longer.

The amount of the land purchased by this plan, if it is approved by Parliament, will be limited in value to $5,000. Interest will be charged at a low rate of five per cent.

When these new proposals for land purchase become effective the Board will be able to loan the soldier settler up to a total of $1,500 for the purchase of livestock and equipment in addition to the loan for the purchase of his land. It will be granted on practically the same terms as the loans now allowed.

As the soldier improves his farm the Board may advance him a further $1,000.

Who May Apply.

The Act applies to any one who has served with an honourable record in the Canadian or Imperial forces in the present war, or to any Canadian who was on active service with the Allied forces, or the widow of any such person who died on active service.

The Board will loan money only to those who have had sufficient experience or training in farming. Each applicant may be required to appear in person before the Qualification Committee in his district.

Training.

Those soldiers who have insufficient experience in farming will be helped by the Board to secure the necessary training to qualify them for the loans.

Special instructional courses are being arranged with the agricultural schools and experimental farms.

Farmers will be asked to co-operate in giving the soldier practical training and knowledge.

Results.

Loans, amounting to over 1¼ million dollars, have already been granted to over one thousand returned soldiers.

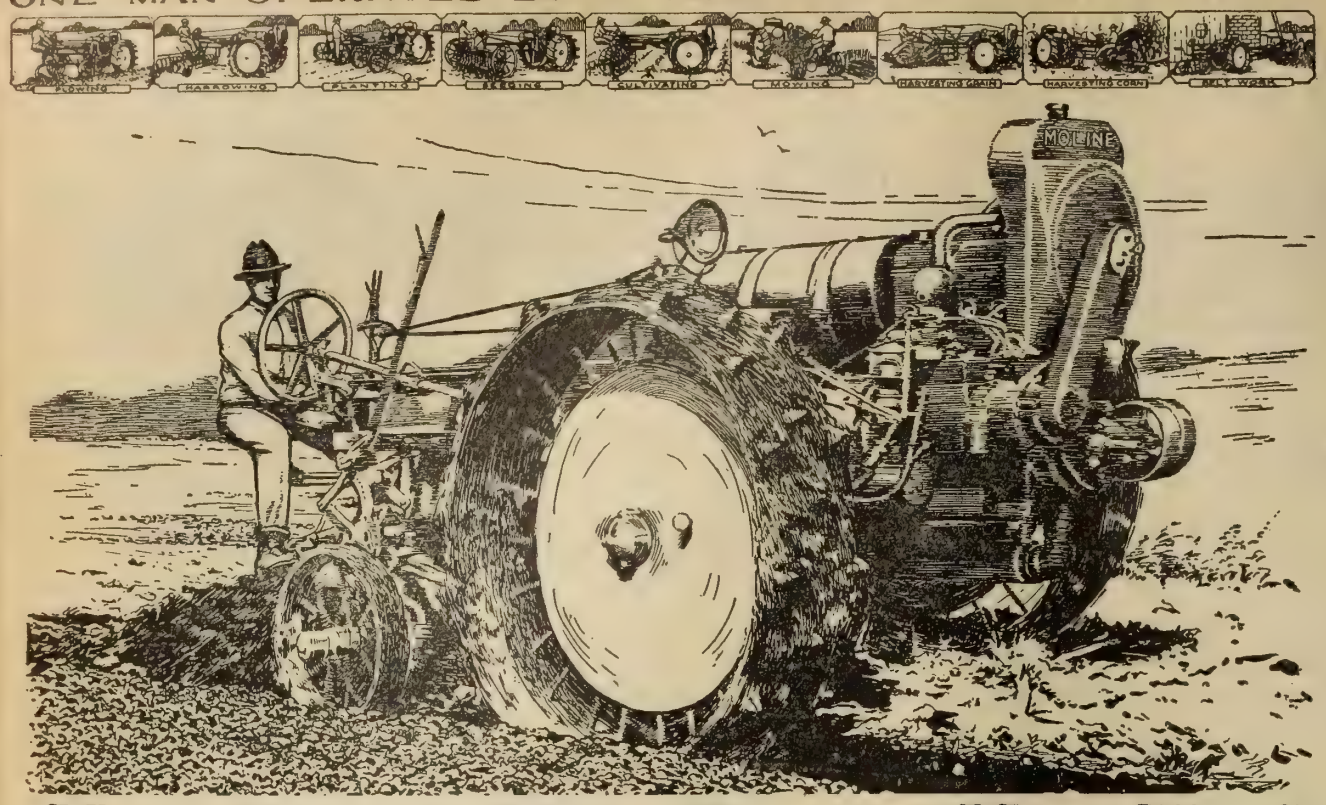
Since the regulations were completed last July, over eight hundred soldiers have made entries on Dominion Crown Lands under the Soldier Settlement Act.

Offices of the Soldier Settlement Board are located as follows: Post Office Bldg., EDMONTON, Alta.; Post Office Bldg., WINNIPEG, Man.; Pemberton Bldg., VICTORIA, B.C.; McCallum Hill Bldg., REGINA, Sask.; 32 Adelaide St. E., TORONTO, Ont.; Drummond Bldg., MONTREAL, Que. In New Brunswick the Board is temporarily represented by the Secretary of the Provincial Farm Settlement Board, St. John; in Nova Scotia, by the Secretary of the Soldiers' Aid Commission, Halifax, N.S.; and in Prince Edward Island by the Minister of Agriculture, Charlottetown.

The Repatriation Committee

OTTAWA

ONE MAN OPERATES BOTH TRACTOR AND IMPLEMENT



More Speed-More Power-More Work

EVERY farmer who sees the new Moline-Universal Model D plowing is astonished at its speed, the splendid quality of work and the ease at which it operates. After seeing the Moline-Universal work, you will realize that the number of plows pulled is less important than the amount of work accomplished.

Great Capacity for Work

Speed, power and light weight are combined in the new Moline-Universal tractor to a remarkable degree. As a result, under any ordinary plowing conditions, the Moline-Universal pulling 2 plows at 3½ m.p.h. will plow 9 acres in a 10-hour day—equal to a 3-plow tractor traveling 2¼ m.p.h., the usual tractor speed. Thus the Moline-Universal gives you large capacity for heavy work, ample power for all belt work on the average farm, with these distinct advantages over other tractors—light weight; greater economy and ease of operation; ability to do all farm work, including cultivating, and ONE-MAN control of both tractor and implement from the seat of the implement, where he must sit in order to do good work.

Does Better Plowing

An advantage of speed plowing is the better quality of the work. With properly shaped moldboards and the Moline-Universal tractor plowing at 3½ m.p.h. the soil is more thoroughly pulverized and compacted than at slower speeds. It is left in such a level and fine condition that furrow marks are hard to distinguish.

Positive Reliability

And keep this in mind always—the Moline-Universal is built for positive reliability. The powerful 4-cylinder, overhead-valve, vibrationless engine delivers full 9 h.p. at drawbar and 18 h.p. on belt; unusually large bearings lubricated under 35 lbs. pressure; Remy electric starting, lighting and ignition system with governor generator; all moving parts completely enclosed; 15 Hyatt roller bearings; 5 adjustable ball thrust bearings; 7 splined shafts; differential lock; heat treated and steel cut gears—these give "positive reliability,' and make the new Moline-Universal the best tractor money can buy.

Self Starter and Electric Lights

Self starter relieves the back breaking strain of cranking, makes tractor operation easy for non-robust help. In fact, many women and boys are successfully running Moline-Universal tractors. The self starter is a feature every overator will appreciate. Electric lights increase the working capacity of the Moline-Universal so that you can use the tractor night and day in the busy season. It gives you an emergency power always available to make up for any unavoidable delays.

Free Tractor Catalog

Your copy of our new tractor catalog which completely describes the Moline-Universal Model D is now ready. A postal will bring it to you, also the name of your nearest dealer. Address Dept. M

Canadian Distributors

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Manufactured by Moline Plow Co., Moline, Ill.

Manufacturers of Quality Farm Implements Since 1865.

MOLINE UNIVERSAL TRACTOR

It Solves The Farm Help Problem

For Quick Growth and Early Maturity, Feed

GARDINER'S CALF MEAL

¶ It replaces perfectly the cream in skim milk, and provides the nourishment necessary for quick, vigorous growth. It is rich in protein, and several points higher in fat than any other meal on the market.

¶ Feed Gardiner's Calf Meal first with skim milk, then with milk-and-water, and finally with water only, and your breeding calves will mature earlier and your young steers will be ready for market sooner. It is equally good for colts, lambs and little pigs.

¶ Put up in 25, 50 and 100-lb. bags. If your dealer doesn't handle it, write us for prices, and for information about Gardiner's other products—Ovatum, Pig Meal, Sac-a-fat and Cotton Seed Meal.

GARDINER BROS., Feed Specialists, SARNIA, Ont. 15

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THE SUPERIOR WAY

Stable Fittings of Intrinsic Merit
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Grasselli Spray Materials

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Be sure and get the best

GRASSELLI CHEMICAL CO., LIMITED

Hamilton Toronto Montreal

SMALL HOLDERS PROSPER

By John Pawtuckaway

WHEN the real estate and building boom began to ebb in British Columbia, a genuine back-to-the-land movement set in which resulted in extensive settlement on small Fraser Valley tracts. Poultry raising and small fruits were the prospective specialties of most of these new farmers. With the slump in business conditions, and the Great War beginning soon after, those who had built large poultry plants had had hard days. The small fruit industry more quickly came into its own. It is gratifying to note that 1919 starts with excellent prospects for the Fraser Valley small holders.

The poultry outlook is for very good market prices for products, including eggs and breeding stock. With lower feed in prospect for another year, with a return to old conditions generally anticipated, the 1919 poultry crop in British Columbia will undoubtedly be the largest in several years.

What poultry-raisers who "stayed in it" through the war have learned about flock management ought to return them good dividends through all subsequent experience.

The small fruit growers had a splendid year in 1918, and another good year seems assured. Vancouver Island berry growers have contracted practically all their cannery berries at a top-notch price, 16 cents a pound, f.o.b. Victoria. At this writing no contracts have been signed in the Hatzic, Fraser Valley, district, but excellent offers have been made and the outlook is that the entire crop will be contracted for in the course of a few weeks. Using a new system of car shipping, the Hatzic growers, co-operating, expect to lay down fresh berries in Winnipeg next season. In the berry industry production conditions in the Northwest are such that good prices are certain. The contract system, followed by the jam factories, is a market stabilizer. Also it spreads some of the business strain in a concentrated industry, which taxes a grower's energies to the limit during the rush period.

The Port Haney, Fraser Valley, district has many small holdings. Here the poultry industry has had great growth. The business of the United Farmers, Ltd., a local co-operative feed association formed by poultrymen, has grown from $29,000 in 1913 to $124,000 in 1918. There are said to be ten times as many hens in this district in 1919 as there were in 1914.

Dairying is the leading Fraser Valley farm industry. Side by side one finds big mixed farms and 5-acre tracts. Real estate men subdividing large properties into tracts weren't always particular to use the kind of land a small-holder ought to be given. It was rather tragic to make into many small farms, tracts which a decent big farm couldn't be made out of. But with all their difficulties and deficiencies the small-holders have a lot of courage. And placed in intensive crops like raspberries and strawberries, even five acres is a big farm.

Number of Trees or Bushes Needed to Plant an Acre at Various Distances Apart

2 feet apart each way	10.890
3 feet by 2 feet	7.260
3 feet apart each way	4.840
4 " "	2,722
5 " "	1.742
6 " "	1.210
8 " "	680
10 " "	435
12 " "	302
15 " "	193
18 " "	134
20 " "	108
25 " "	69
30 " "	48
40 " "	27
50 " "	17

LEEDS, ENGLAND

Please renew my subscription for the FARMERS' MAGAZINE *for which find enclosed P. O. Order. May I put on record how highly I appreciate the many splendid varied articles that appear in the Magazine, all tending to put agriculture where it belongs, the base on which society rest.* H. SWAILS.

A Young Agricultural Leader Gone

ONTARIO has lost a brilliant young leader in the death of John W. Stark, Representative of the Ontario Department of Agriculture in Peel county. Mr. Stark took charge of the Agricultural office in Brampton three years ago and with absolute fearlessness of attempting the untried, he accomplished some things important not only for their immediate benefits in his own country, but which have established a precedent for a better country life movement all over Canada.

Gifted with the rare combination of vision and executive ability, he was not afraid of experimental work. It didn't matter whether an idea was popular or not; if it was the right thing he set to work to make it popular, and had such a way of communicating his enthusiasm to others that nothing he attempted ever seemed to end without the hearty co-operation of the whole community. Two years ago he arranged a survey of Caledon township—the first rural social and business survey made in Canada. It looked rather impossible to many people then; it is quoted as a standard all over the Dominion now.

John W. Stark, B.S.A., Agricultural Representative for Peel County.

Last spring he led a campaign for medical inspection,followed by clinics, for all the schools in the county and this fall he had the experiment of a dental clinic tried in one section. He also secured for Peel the first rural school nurse in Canada. He was the pioneer of Home Demonstration or "woman county agent" work in Canada, having persuaded the Department to let a Home Demonstrator commence work in the county last spring, and he was working for the appointment of a Public Health nurse.

In practical agriculture he was a dependable adviser and a live organizer. During the last year he had started three livestock clubs for the young people. He was closely connected with the Peel county Milk Producers' Association and on one occasion in particular his business foresight saved the shareholders some hundreds of dollars. His favorite objective, however, were better health, better homes, better social life and child welfare. In his office he had a demonstration equipment of farm home convenience and labor-saving machinery. Last June he arranged a Baby Welfare Week in Brampton. He was conducting a short course with the young people at Palgrave when he was taken ill with pneumonia, and after a three weeks' illness he died at Brampton on February first. To the last day he took a keen interest in and gave directions for carrying on the work he had begun.

Mr. Stark had been offered several rather enviable positions in other places but he repeatedly remarked that "there were some things he wanted to do yet in Peel county." Judging from the inquiries and tokens of sympathy that poured in from every corner during his illness and afterwards, his work was appreciated. He was extremely popular with the farmers and young people, blessed by the mothers and loved by the children—he was well known in all the schools and most of the homes. At the last meeting of the session of the Presbyterian church at Brampton he was the unanimous choice for the new eldership.

Mr. Stark was only twenty-eight years old but he had accomplished quite enough for a full three score and ten. Perhaps in his ambition for service he gave too much, but the results of his work are only beginning. He was born at Chatham, Ontario, was intensely fond of his home and his people, and the bereaved family have the sympathy of a wide circle of friends.

THE CATTLE TRADE

By P. A. Crane

The cattle trade is experiencing a continuation of high prices, quotations during the past month holding at strong figures. The export demand for cattle has not been affected in the same manner as in regard to hogs. There is a brisk inquiry for beef suitable for exports, and any stuff worthy of this class is bringing a good price on the Canadian markets. The number of exportable cattle coming forward just now is not heavy, and offerings of all classes average smaller than during the last quarter of 1918. It seems to be the general opinion of those in a position to know, that prices of livestock in Canada will not reach pre-war levels for some time to come. Europe's insatiable demand for beef provides this Dominion with an unrivalled opportunity. While grains are dropping considerably in price, it is not likely that livestock will experience a similar readjustment for a few years at least, because recuperation in this line is necessarily a slow process, and herds in European countries have been almost depleted. While lack of shipping space has somewhat curtailed shipments overseas recently, there is no let-up in the buying operations and stocks for export are held in storage, awaiting available tonnage.

Comparisons of prices prevailing on both the Eastern and Western markets reveals the fact that choice cattle of export quality are realizing from $14 to $16 per hundredweight. These values compare very favorably with last year's high quotations, and prove that for really prime beef, prices show very slight recessions. The medium and common cattle are, of course, selling lower. The demand for the domestic trade has been good since the first of the year, and this winter, on account of its open weather, drovers have experienced little difficulty in getting their shipments to market. Last winter it will be remembered, owing to cold and stormy conditions, serious losses and great difficulties in the way of railway tie-ups, were all too frequent. The number of stall-fed cattle being carried by farmers this winter is reported to be larger than usual. Consequently the spring and early summer months should see some splendidly finished beef on sale. The inquiry for stockers and feeders is generally quiet at present, but the offerings are not heavy. There has been a movement of this class of stock to United States points. On the whole, the position of the Canadian livestock trade is a very stable one, and the future promises no serious set-backs.

As is usual at the beginning of the year, offerings of sheep and lambs fall off very materially, farmers disposing of their surplus pretty well during the autumn months. In spite of very limited receipts, prices are ruling easy, demand having likewise shown a shrinkage. Lambs are not bringing more than $15 and sales are not infrequent under that figure.

Both Carry The Same Food Value

Measured by Energy Units

The 35-cent package of Quaker Oats contains 6,221 calories of energy. And foods, as you know, are now measured by calories.

Note what a bulk of some foods it takes to equal that single package. That is, to supply the same energy value.

It Equals In Calories

53 Cans of Tomatoes
Or 21 Cans of Peas
Or 50 Large Potatoes
Or 750 Oysters
Or 80 Bananas
Or 22 Pounds Perch
Or 89 Eggs
Or 9 Pounds Veal Cutlets

Compare the cost on this same basis and the difference is amazing. See table below.

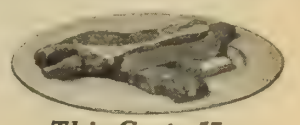
Note that meat foods, fish and eggs average ten times Quaker Oats' cost for the energy they yield.

But the difference is greater still. The oat is a better-balanced food. It is more nearly a complete food. For people of all ages, it is called "The Food of Foods."

Note these cost comparisons, based on prices at this writing. Consider them in your breakfasts. Ten people can be fed on Quaker Oats at the cost of feeding one on meats.

Cost Per 1,000 Calories

Quaker Oats	5½ cents
Round Steak	41 "
Veal Cutlets	57 "
Dried Beef	70 "
Salt Codfish	75 "
Fresh Halibut	53 "
Hens' Eggs	70 "



This Costs 57c
Per 1,000 Calories

This Costs 60c
Per 1,000 Calories

Quaker Oats Costs 5½c
Per 1,000 Calories

Quaker Oats

The Exquisite Flakes

In Quaker Oats we flake the queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel.

The result is a flavor which has won millions, and which costs you no extra price. Don't forget to specify this brand.

Two Sizes: 35c and 15c---Except in Far West

The Quaker Oats Company

Peterborough, Canada — Saskatoon, Canada

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The Macdonald Tractor
12-24
Gasoline or Kerosene

High Wheel Type

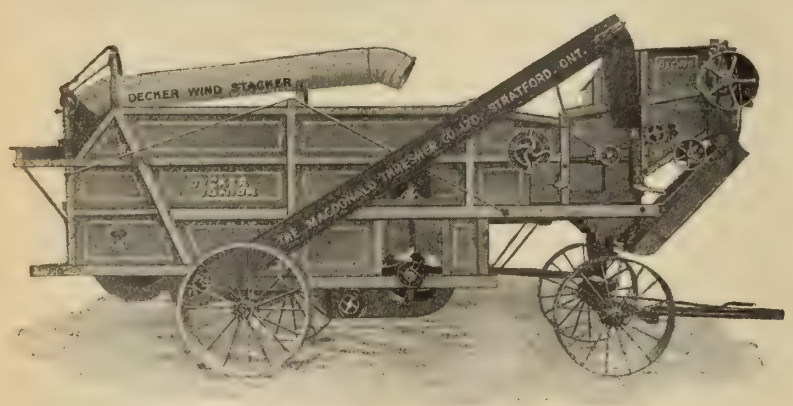
Simple, Powerful and Efficient

SPECIFICATIONS

Motor—4 cyl., 4 cycle, 4¾ x 6", 750 rev., 31 H.P.
Fuel—Gasoline or Kerosene.
Fuel Capacity—20 gallons.
Ignition—Dixie Magneto Impulse Starter.
Carburetor—Linga.
Lubrication—Splash and pump system.
Hyatt Roller Bearings.
Traction Speed—1¾ to 4 miles per hour.
Pulley Speed—200 to 800 revolutions.
Drive Pulley—14" diameter.
Scientifically and mechanically correct in detail.

LOOK AT IT.

DECKER JUNIOR SEPARATOR



24x46, 28x46, 32x50 Sizes

Just the machine for the gas tractor.
Simple, durable, easily handled, big capacity for size and the exact reproduction of our long and favorably well-known standard Decker.
Hundreds of farmers are using them.
Our long experience of 40 years is embodied in our machinery. We guarantee satisfaction and we have always given it.

Agents Wanted

THE MACDONALD THRESHER CO., LTD.
Stratford - Ontario

LIVESTOCK FACTS

HORSES

CANADA'S horse population is undergoing some fundamental changes. Percherons are coming in with the Western farmers. Light horses feel the crowding of the motor car and Belgians are growing in favor. Still a lot of scrubs infest certain sections and the use of the pure-bred sound sire is not as general as one would wish:

PURE-BRED HORSE REGISTRATIONS

Breeds	1914.	1917.	1918.
Heavy—			
Clydesdale	2,900	3,885	3,526
Percheron	962	2,304	3,597
Shire	135	158	178
Belgian	132	241	508
Suffolk	31	34	31
Light—			
Hackney	101	77	93
Thoroughbred	194	158	177
Pony	228	40	68
French Coach	19	2	4
Standard Bred	361	324	289

HORSES IN CANADA, 1914-17-18

By Provinces and all Canada.	1914.	1917.	1918.
P.E. Island	36.114	38.948	32.620
Nova Scotia	62,581	64,193	70.101
New Brunswick	65 702	65,169	66.590
Quebec	372,009	332,628	496.811
Ontario	904.975	887.246	732.977
Manitoba	316,707	318,387	384,772
Saskatchewan	609,521	678.965	990.009
Alberta	519,424	590.245	791,246
British Columbia	60.705	59,473	44.131
All Canada	2,947,738	3,035,254	3,609,257

CANADA'S HORSES EXPORTED

To—	1914.	1917.	1918.
Great Britain	34	14 243	not given
United States	3,245	8,327	"
Other countries	207	9,846	"
Totals	3,486	32,416	30,465

It will be noted that the Clydesdale registrations have decreased over 1917, while the Percheron has increased by 50 per cent. and even surpasses Clydesdale totals. The Belgians also have take taken quite a jump. All light horses are weak.

An examination of the provinces will show a reduction in horses in Ontario of 150,000, an increase in Quebec equal to Ontario's loss, and big increases in the prairies. Evidently tractors can't be crowding the horse out of farming. Saskatchewan had a big increase, but these figures show a greater difference than the actual, because the new methods of getting statistics is accountable for some of the fuller information.

In the horse exports, things are not satisfactory and what one would have desired.

ANIMALS FROM OTHER COUNTRIES ELIGIBLE FOR REGISTRATION IN THE CANADIAN NATIONAL LIVE STOCK RECORDS

HORSES

Clydesdale

Animals recorded and numbered in the Clydesdale Stud Book of Great Britain and Ireland are eligible, provided their sires and dams and grand sires and grand dams are also recorded and numbered therein. The breeding of many horses recorded in the Scottish Book does not come up to this standard.

Animals recorded in the American Clydesdale Stud Book, providing their breeding complies with the Canadian standard of registration.

Fees to members—animals imported from Great Britain, stallions, $3.00; mares, $2.00; animals from the United States, $3.00. To non-members, stallions, $4.00; mares, $3.00; animals from the United States, $6.00. If the animals are not recorded within 30 days of importation, the fee is $25.00 and $50.00 to members and non-members respectively.

Hackney

Stallions or Mares recorded in the English Hackney Stud Book.

Stallions and Mares recorded in the American Hackney Stud Book, providing their breeding complies with the Canadian standard of registration.

Fees to members $2.00, to non-members $4.00.

Shire

All animals recorded in the English Shire Horse Stud Book or in the American Shire Horse Stud Book, providing their breeding complies with the Canadian standard of registration. Fees to members—animals under three years of age, $1.00; animals over three years of age, $2.00. To non-members, animals under three years of age, $2.00; animals over three years of age, $4.00. An additional fee of $1.00 is charged for each ancestor recorded to complete pedigrees of animals recorded in the American Stud Book.

Percheron

All animals recorded in the Stud Book Percheronne de France or in the American Percheron Stud Book, if, on investigation, their pedigrees are found to be correct. Fees to members—stallions, $5.00; mares, $2.50; to non-members—stallions, $10.00; mares, $5.00. An additional fee of 50 cents is charged for each ancestor recorded to complete pedigrees of animals recorded in the American Percheron Stud Book, Chicago.

No American bred Percheron will be accepted for registration unless certificate of Registration issued by the Percheron Society of America, Wayne Dinsmore, Secretary, Union Stock Yards, Chicago, is presented with the application.

Thoroughbred

All animals recorded in the General Stud Book, Great Britain, American, French, Belgian, or Australian Stud Books. Fees to members, $2.00; to non-members, $4.00.

Belgian

All animals recorded in the Stud Book des Chevaux de Traits Belges, or in the American Register of Belgian Draft Horses. Fees to members—stallions, $3; mares, $1; to non-members—stallions, $4; mares, $2. An additional fee of 50 cents is charged for each ancestor recorded to complete pedigrees of animals recorded in the American Stud Book.

Shetland Ponies

All animals recorded in the English Suffolk Book of Scotland, or the Shetland Islands Pony Stud Book, animals recorded in the American Shetland Pony Stud Book. Fees to members, $1; to non-members, $2.

French Coach

All animals recorded in the Stud Book Francais Registre des Chevaux de Demi-Sang, or animals recorded in the French Coach Horse Stud Book of America, or in the American French Coach Horse Register, if upon investigation pedigrees are found correct and proper. Fees to members—stallions, $3; mares, $1; to non-members—stallions, $5; mares, $2.

Suffolk

All animals recorded in the English Suffolk Stud Book or in the American Suffolk Horse Stud Book. Fees to members—stallions, $3; mares, $2; to non-members—stallions, $4; mares, $3.

Standard Bred

All animals recorded as Standard in the American Trotting Register. Fees to members, $1.50; to non-members, $3.

CATTLE

Shorthorn

(a) Animals recorded in Coates' English Shorthorn Herd Book.

(b) Animals recorded in the American Shorthorn Herd Book. Fees to members—English animals, $1; American animals, $1; to non-members—English animals, $1.50; American animals, $1.50.

SHEEP

AT U.S. SHEEP MARKETS

Markets	1918	1917
Chicago	4,629,736	3,595,228
Kansas City	1,667,462	1,498,550
Omaha	3,385,696	3,016,630
St. Louis	536.406	531,034
St. Joseph	827,489	678,854
Sioux City	387,423	267,440
St. Paul	630.203	429.617
Denver	1,651,759	2,059,898
Ft. Worth	337.626	402.961
Buffalo	633.645	596,378
Totals	14,687,446	13,076,590

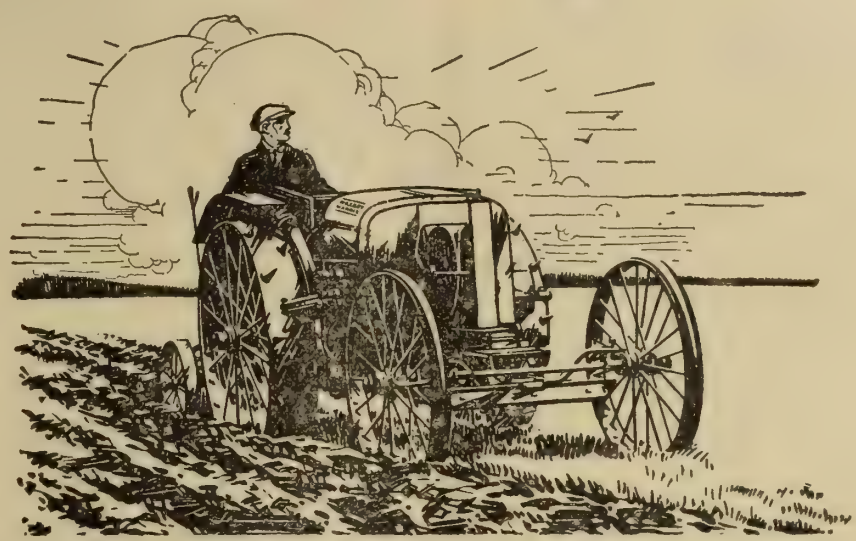
Net Increase 1,610,856 (12.31%).

SHEEP IN CANADA

Provinces—	1914.	1917.	1918.
P. E. I.	85,351	90,573	73,046
Nova Scotia	211,921	200,979	259,847
New Brunswick	121,739	103,877	140,015
Quebec	571,287	502,688	959,070
Ontario	640,416	695,477	972,341
Manitoba	45,303	54,540	136,782
Saskatchewan	126,027	149,418	134,177
Alberta	211,001	262,657	332,179
B. Columbia	45,000	49,508	45,291
Canada	2,058,045	2,009,717	3,052,748

It will be noted that the increase in sheep in Canada has occurred in all the provinces except Prince Edward Island, Saskatchewan and British Columbia. This is explained by the call for more grain production in Prince Edward Island and Saskatchewan in oats and wheat respectively and in British Columbia owing doubtless to the difficulties of protecting flocks from wild animals. Ontario and Quebec have each nearly a million sheep.

Massey-Harris



Built for Service

The real test of a Tractor is—will it do the work? The Massey-Harris Tractor has met this test and proved itself to be the Tractor built for service on the farm.

Constructed on sound scientific principles, free from any freakish contraptions, with a strong sturdy Frame able to stand the severe strain of farm work, and an Engine with power sufficient for any ordinary farming operations.

In the field it has power to pull a 3-Bottom Plow, and for belt work it has 25 Horse-Power. The

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is just the right size of Tractor for the average farm, and is so simple that any farmer can operate it.

The name "Massey-Harris" on the Tractor is the farmers' best guarantee. It stands for all that is best in Farm Implements the world over, and represents over 70 years experience in supplying the needs of farmers. This long experience has enabled the makers to embody every worth while feature in the Massey-Harris Tractor, and so offer a Tractor equipped to render power for every purpose on the farm.

Also, in buying a Massey-Harris Tractor you buy from a Company which makes both the Tractor and the Implements for use with it, and stands back of the whole outfit. The Organization of Massey-Harris Co., Ltd. with its Branches throughout the Dominion, and its Local Agents in almost every Town and Village, assures the owner of the Massey-Harris Tractor of the most efficient service.

Some of the outstanding features in the Massey-Harris are: An Underslung Frame which gives low centre of gravity and prevents overturning; the Flexible Front Axle Connection to avoid strains on uneven ground; Short Turning Radius, although the Front Wheels are of large diameter; Transmission through Spur Gears exclusively; Belt Drive from Pulley without Gears; All working parts protected from dust; Ready access to all parts; Easy Control. The Engine is 4-Cylinder 4-Cycle, developing 25 H.P. at the Belt and 12 H.P. on the Draw Bar and operates on either Gasoline or Kerosene.

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ALL VAN BRUNT DISC BEARINGS ARE GUARANTEED FOR THE LIFE OF THE DRILL

You will save money by investigating the superior construction and exclusive features of this machine. It is the product of fifty years of practical experience in the manufacture of drills.

See your nearest John Deere dealer or write direct to—

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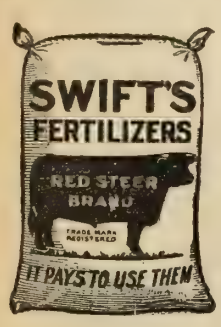

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FUNNY FEATURES ABOUT HOGS

Continued from page 9

a mixture of Berkshire, Black Suffolk and Neapolitan blood, the breed being established about ninety years ago. The Essex is a small hog and its use is limited to small feeders and farmers. The breed is famed for early maturity, as feeders usually are ready for market at six months of age. Excellent meat is produced, which is open to criticism due to its undue proportion of fat to lean. This is a docile hog which fattens easily and rapidly. The sows are very prolific although sometimes open to criticism due to the large amounts of fat which they carry and which militate against the raising of large litters of twelve to fifteen pigs which should ordinarily be farrowed by females of this breed. The breed is well distributed and has met with favor as a profitable hog to use in warm climates.

Under ordinary treatment the Essex weighs from 250 to 300 pounds when mature, although weights of 500 pounds are attained where special attention is devoted to the animals. An Essex breeder describes the breed in this fashion: "The Essex is pure black in color with a short head, slightly dished face and broad forehead surmounted by small fine ears which are carried upright. The back is broad, short and blocky while the sides have the necessary thickness and depth and are fronted by well-laid, thickly fleshed shoulder and bounded at the back by thick, deep hams. Fine-boned legs characterize the breed, which is discounted sometimes due to its short legs. Of all the English breeds, the Essex has been most highly finished and fattened for market. The injury to the breed which has attended this undue accumulation of fat is depicted in the weak and smaller litters and weakness of constitution in the progeny.

The Small Yorkshire hog of England comes of obscure origin. It is believed that the breed owes much of its importance to the use of Chinese stock in its formation. From the standpoint of fancy characters this is the most highly developed of any breed of swine. The fashionable head is a model of regularity and conformation while the ears are short, small and erect and the jowl is well rounded and highly developed. As a fat producer the breed is seldom surpassed with its broad, short, deep back and blocky form on which to deposit the excess weight. The hams and shoulders are heavy and full, while the bone, hair and general quality are excellent. The color is white with small black spots sometimes appearing on the skin.

The Small Yorkshire is one of the smallest breeds, mature hogs weighing only 180 to 200 pounds apiece. A specialty with the farmer who handles Small Yorkshires is the production of small, roasting pigs for the fancy trade as the breed is ideal for this purpose. Although easily fattened the animals never make large gains. The animals can be fattened on half the food that is required by the other breeds but their daily gains are much less. The Small Yorkshire is a good grazer in England although its meat is discounted there at present due to its high content of fat. When mated to a larger breed the Small Yorkshire produces improved progeny which is superior to the purebred stock. Excessive fat development also gives rise to small litters and poor nursing on the part of the dams. In the case of this breed unpopularity has been gained as a result of the accumulation of excessive fat.

Another breed of hogs is known as the Red Berkshires, which gain their name from the fact that at one time the Berkshire breed showed some hogs of a reddish color. In form the Red Berkshire is more like the Hampshire hog than like the Berkshire. It is a breed of restricted development which has been limited largely to the section of America where it originated. It is not a pure breed, as foreign blood has been introduced several times in order to better defective characters of the breed. The Red Berkshire is really nothing more or less than a hybrid hog of local significance only in the section of its nativity. It will never increase much in popularity because it is in no respect or qualification the equal of the standard breeds of hogs.

At the present time there are enough breeds of hogs on the market to satisfy the demands of the most critical. The expert has the seven standard as well as the four or five odd minor breeds to select from in addition to the local and native hogs of certain sections. It would seem that the further expansion of the hog business as regards the increasing of breeds should be discontinued and that every scientist and practical hogman interested in the improvement of the market or breeding hog should devote all his efforts to the betterment of the best of the standard and minor breeds. An increase of better breeds and a decrease of mediocre, hit-and-miss families of hogs should be urged and compaigned for. Intensive selection, the fixation and strengthening of fluctuating characters, the breeding for greater uniformity of type and conformation and the adaptation of the best breeds to every territory in which they can be profitably raised and maintained should occupy the full time of our best breeders rather than the harum-scarum mingling of blood and the resultless efforts to develop a miracle breed of swine which apparently are the aims of some of the stockmen who are now engaged in the hog raising business.

RETURNED SOLDIERS AND AGRICULTURE.

By A. W. Trewin
(*Thunder Bay District*)

THE Militia Department seems to be in a quandary regarding the settlement of returned men. Speaking for the districts of Thunder Bay and Rainy River along agricultural lines I find that several hundred lads came off the farms in these districts. These could be sent any time, as they have homes to go to immediately and are anxious to get back to the farm as soon as the Department of Militia can send them. Send those home who will be no further burden on the department, which will give the lads who have no homes to come to leave overseas until the department can make arrangements, and I wish to say that very few of those who did not leave the farm to go overseas will take up farm life. Send the farmer boys home who have established farms to go to and will come at once to the call of farm production. The conscription last spring carried several thousand from Ontario alone, and if these are not sent home by March to make preparations for farm operations next summer it will be no use for this year. Many a farmer up in years, whose only boy was taken, has had to sell out and others may have to yet. I have two boys taken off, and need them now.

USE OF EXPLOSIVES IN PLANTING TREES

By W. F. S.

A NOVEL use for explosives has been found by two French investigators. It was noticed that wild vegetation grew with extraordinary luxuriance in old shell craters and in trenches which had been destroyed by explosives. This exceptional growth was unquestionably due to the shattering of the soil into very fine particles and the fact that the soil becomes impregnated with nitrates from the explosive.

Experiments in the western United States with cherry trees planted in dynamited holes resulted in about four-foot growth in two years compared with half this growth in soil ordinarily worked.

A suitable explosive mixture has been found which has great power. This explosive is made up in the form of a cartridge in the bottom of which are suitable fertilizers such as potash, phosphates, etc.

FRUIT GROWING

Spray Calendar for Nova Scotia Apple Orchards for 1919.

Prepared by G. E. Sanders and W. H. Brittain.

	First Spray	Second Spray	Third Spray	Fourth Spray
Time	When leaves are about one-quarter of an inch in diameter. For cankerworm defer this spray for a few days.	When the blossom buds are showing pink at the tip. If Green Apple Bug is present, postpone until just before blossoms open.	When blossom petals have fallen.	Two weeks after the third spray.
Material	3-10-40 Bordeaux and one pound arsenate of lime to 40 gallons. (3 lbs. copper sulphate, 10 lbs. lime to 40 gallons water.)	2-10-40 Bordeaux and one pound arsenate of lime to 40 gallons. (The third spray formula may be used here if desired.)	Sodium polysulphide, (1 qt. sulfocide or 1 lb. soluble sulphur), ½ lb. arsenate of lime, 5 lbs. hydrated lime to 40 gallons water.	2-10-40 Bordeaux and one pound arsenate of lime to 40 gallons.
Application	Drench thoroughly with spray gun at 225 pounds pressure.	Drench thoroughly with a spray gun at 225 pounds pressure holding the instrument further from the trees than in the first spray.	Apply as a mist with the spray gun, holding it well off from the trees, directing the spray downward excepting when spraying for Green Apple Bug.	Drench thoroughly with a spray gun.
Pests Destroyed	Apple Scab, Budmoth, Brown-tail Moth, Canker Worm, Tent Caterpillars.	Apple Scab, Budmoth, Canker Worm, Fruit Worms, Green Apple Bug, Brown-tail Moth.	Apple Scab, Budmoth, Green Apple Bug, Codling Moth, Fruit Worms, Tussock Moth, "Pit Rot."	Apple Scab, Tussock Moth, Fall Webworm, Red Humped Caterpillar, Yellow Necked Caterpillar, "Pit Rot," Ink Spot. Storage Rots.

Modifications for Special Insects

GREEN APPLE BUG.—Where this pest is present substitute for the SECOND SPRAY the following formula: Two pounds Sodium polysulphide, one pint nicotine sulphate, to 100 gallons of water, omitting the arsenical poison. The addition of 4 pounds of fish oil soap to each 100 gallons improves this spray. If green apple bug is serious, use this formula for the third spray also, instead of the regular one, drenching thoroughly.

CANKER WORM.—Where this pest is present use 5 pounds of paste lead arsenate, 2 pounds of lime to 40 gallons of water, instead of the regular formula for the SECOND SPRAY. Do not use any fungicide with this quantity of lead arsenate.

APHIDS.—If aphids appear in the orchard add three-quarters of a pint of nicotine sulphate to each 100 gallons of the formula recommended for the period, and spray thoroughly.

Preparation of a Quickly Made Bordeaux Mixture

To make Bordeaux rapidly put the required amount of powdered or dissolved copper sulphate into the spray tank. Start the engine, and with the agitator running, fill the tank. While the agitator is still running add the hydrated lime and finally the insecticide. The Bordeaux is then ready to apply.

Warnings

Do not use arsenate of lime alone on apple foliage.

Do not use arsenate of lead with sodium polysulphide.

Do not use Bordeaux for the third spray, i.e., immediately after the blossoms fall.

In making Bordeaux for apple spraying do not use less than three parts of lime to one of copper sulphate.

Do not leave sodium polysulphide exposed to the air, keep it in a closed container.

Be sure to add the lime to the sodium polysulphide arsenate of lime combination.

Most of the common insecticides are safe when used with Bordeaux.

Measure the capacity of your spray tank.

NOTE.—If weather conditions and the prevalence of pests make it desirable, a fifth spray may be applied two weeks after the fourth and may be similar to the fourth in materials and application.

Spray Calendar for Ontario

PLANTS AND PESTS	1st APPLICATION	2nd APPLICATION.	3rd APPLICATION.
APPLE Scab or black spot, canker, leaf spot, codling moth and other biting insects, scale insects, blister mite and aphids.	Either before or soon after the leaf-buds burst, preferably the latter. Use A1 or B. For San José scale prune severely, scrape off loose bark and drench the whole tree, paying special attention to outer twigs. If no scale, may use A2 or D.	Just before the blossoms open. Use A2 or D, with 2 or 3 lbs. arsenate of lead paste, or 1 to 1½ lbs. powder or ¾ to 1 lb. of arsenate of lime powder to 40 gallons liquid.	Immediately after the blossoms have all or nearly all, fallen, and before the calyces close. Use A3 or D, with 2 lbs. arsenate of lead paste or 1 lb. powder to each 40 gals. This is the application for codling moth.
PEAR Scab or cracking, blight, codling moth, other biting insects, scale insects, blister mite, psylla and slug.	Shortly before or just after the bud bursts. Use A1 or B. For San José scale see above under Apple.	Just before the blossoms open. Use A3 or D, with 2 or 3 lbs. arsenate of lead paste or 1½ lbs. powder to 40 gals. of liquid.	Just after blossoms have fallen. Use A3 or D, with 2 lbs. arsenate of lead paste or 1 lb. powder to 40 gals.
PLUM AND CHERRY. Black knot, brown rot, leaf blight or shot-hole fungus, curculio, slug, aphids and cherry fruit-flies.	Just before or as the buds are bursting. Use A1 or B. For San José scale see above under Apple. If no scale, may use A2 or D.	Soon after the fruit is set. Use A2 or D, with 3 lbs. arsenate of lead paste or 1½ lbs. powder to 40 gals.	Just before the cherries begin to color. Use A3 or D, with 3 lbs. arsenate of lead paste or 1½ lbs. powder to 40 gals.
PEACH. Leaf-curl, scab or black spot, yellows, little peach, curculio, borer, San Jose scale, shot-hole borer.	Before the buds begin to swell. (All must be done before any sign of bursting of buds.) Use A1 or B. This is usually the only spraying peach trees receive.	Soon after fruit is set. Use 2 or 3 lbs. arsenate of lead and 1 to 2 lbs. freshly slacked lime to 40 gals. water for curculio. Omit if curculio is not troublesome.	About one month after fruit is set. If troubled by Brown Rot use C or dust with sulphur. Good pruning and thinning the fruit help to control this disease.

Ferguson's Alacrity Tomato

SEEDS SELECTED FROM CROWN SETTINGS

The Alacrity produces a compact vine and is usually ten days earlier than any other strain. The entire crop can be gathered generally, in about three weeks from time first fruit ripens. The Alacrity is without doubt the very best and earliest scarlet fruited tomato. Gardeners who seek to have good smooth tomatoes first on the market can find nothing to equal them.

NEW 1919 CATALOGUE FREE

One of the finest seed catalogues published. Gives truthful descriptions and helpful cultural directions of the most reliable sorts of vegetable, flower and field seeds. Write for your free copy.

DUPUY & FERGUSON

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Your Peace Garden

EVEN though the war is over, it is still very necessary to continue your Back-Yard Garden, as the whole world is short of food, and will be for some time to come.

Plant a Peace Garden with Bruce's Seeds, the best that grow. It will be a source of revenue to yourself, and will fulfil a duty to your country.

112-Page Catalogue now ready, describing Seeds, Plants, Bulbs, Poultry Supplies and Garden Implements, and quoting prices. It is free for the asking. Write now for it.

JOHN A. BRUCE & CO., Ltd.

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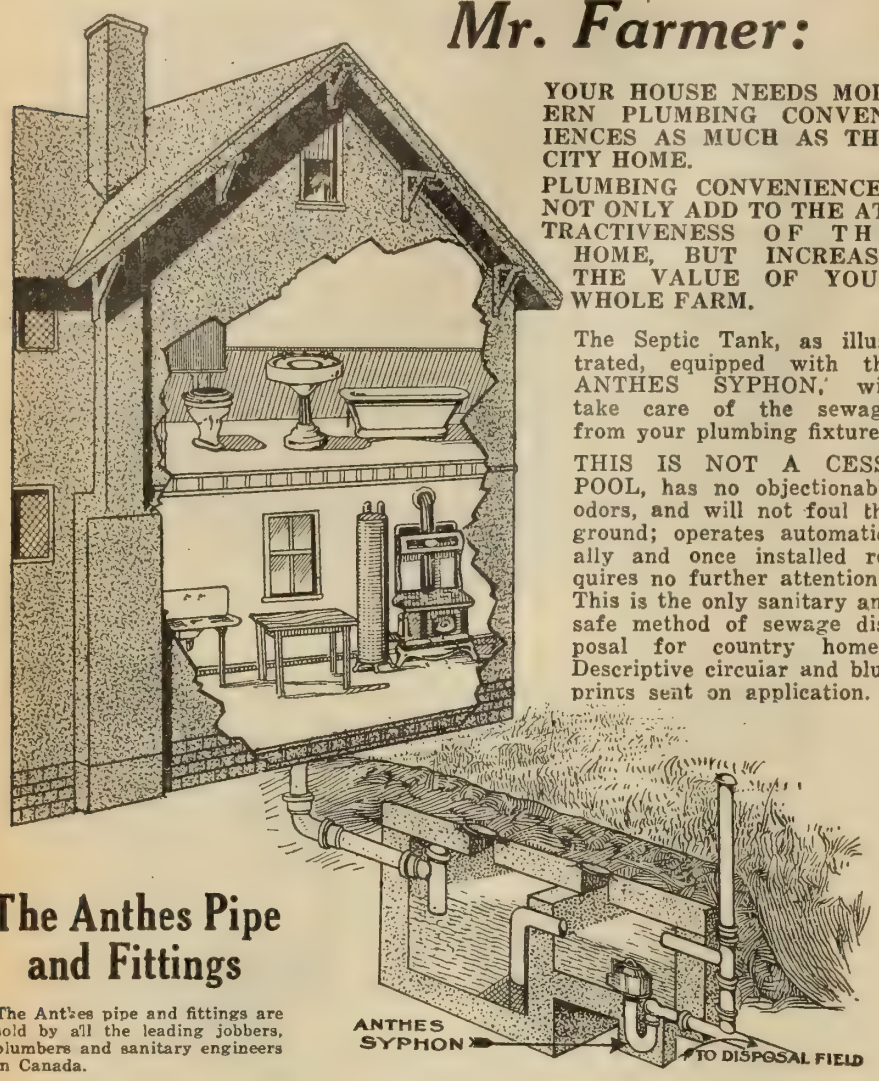
Mr. Farmer:



YOUR HOUSE NEEDS MODERN PLUMBING CONVENIENCES AS MUCH AS THE CITY HOME.

PLUMBING CONVENIENCES NOT ONLY ADD TO THE ATTRACTIVENESS OF THE HOME, BUT INCREASE THE VALUE OF YOUR WHOLE FARM.

The Septic Tank, as illustrated, equipped with the ANTHES SYPHON, will take care of the sewage from your plumbing fixtures.

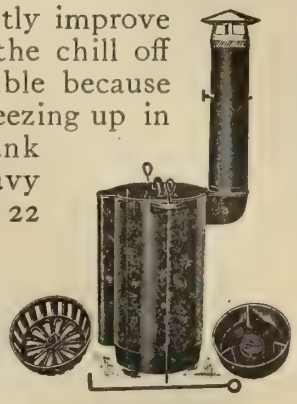
THIS IS NOT A CESS-POOL, has no objectionable odors, and will not foul the ground; operates automatically and once installed requires no further attention. This is the only sanitary and safe method of sewage disposal for country homes. Descriptive circular and blue prints sent on application.

The Anthes Pipe and Fittings

The Anthes pipe and fittings are sold by all the leading jobbers, plumbers and sanitary engineers in Canada.

If you raise stock you need the "ANTHES" Tank Heater and Feed Cooker

The "Anthes" Tank Heater will greatly improve the health of your stock for it takes the chill off the drinking water. It is also invaluable because of the fact that it keeps tank from freezing up in the coldest winter days. "Anthes" Tank Heaters are self sinking, made of Heavy Cast Iron in two sizes---12 inch by 22 inch, and 14 inch by 24 inch.



"Anthes" Self-Sinking Tank Heater

"Anthes" Feed Cookers are very substantially built and neat in appearance, high-grade cast iron kettles with heavy steel jacket in the following sizes:---20, 30, 40, 50, 60 and 75 imperial gallons.

"Anthes" Feed Cooker

If your hardware dealer cannot supply you with the "Anthes," write us direct, giving his name and address.

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TORONTO :-: WINNIPEG

Manufacturers of Soil Pipe and Fittings, Tank Heaters, Feed Cookers, etc.

FARM BUILDINGS

First House in South Alberta

IN 1865, a placer miner from Wild Horse Creek (now Fort Steele, named after Col. Sam Steele) in British Columbia, saddled his horse, and packing three others, made his way through the South Kootenay Pass to the plains east of the Rockies. He was going to "diggings" on the Saskatchewan, so he thought, but as he had no one to direct him, found himself in the vicinity of Medicine Hat. Continuing his journey along the river he soon came to Fort Garry, and from there pushed into Uncle Sam's domain and worked for a year or so as scout and despatch carrier.

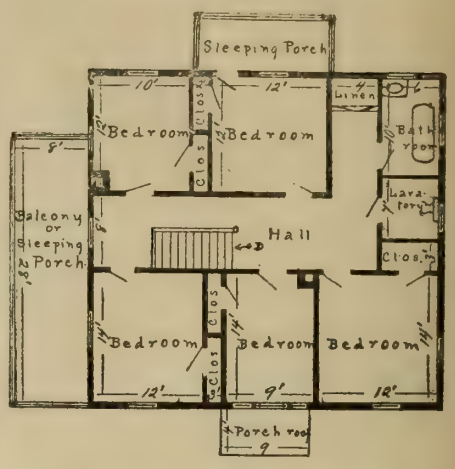
To get from Wild Horse Creek to the prairies of the West, brought the pioneer prospector around the shores of Waterton Lakes, in what is now the south-west corner of Alberta. The more than ordinary grandeur of the scenery and the rich abundance of prairie grass on the plains adjacent to the water made the traveller wish for a home on the shores of the lake. Returning from the United States, where he had taken a wife, John George Brown "squatted" on what the surveyors afterwards marked as Section 31, in Township 1, and range 29, west of the 4th meridian. He was John George Brown then and is yet, but having come from the Kootenay country in B. C., he was afterwards dubbed "Kootenay Brown," to distinguish him from "Poker Brown," "Jug-handle Brown," and several other Browns who came in shortly after. Out of logs cut in the mountains, a house and barn were built and the first homesteader in the southern district of the Western Canada plains began ranching and farming. True, the farming was on a small scale, for there was no one to buy the product, but green feed was grown and a garden planted.

Not many homesteads in the West have as interesting history attached to them as the south-west quarter of 31-1-29. It was taken before anyone thought of surveys and all the improvements were made long before it was filed on. On it a store was built and trade with the Indians of British Columbia and the Flathead Country in Montana was carried on for many years. When the oil boom struck the South Kootenay Pass district fifteen years ago, buildings were built on this homestead and preparations made to drill for oil. The homestead was afterwards sold to an oil company for a neat sum of money, and, worse luck, a bunch of oil stock. The quarter is now a part of Waterton Lakes National Park, and is one of the interesting attractions for visitors. The old house has fallen into the Waterton River on the shores of which it was built, and Kootenay has long ago moved to a second homestead, to which he was entitled because of long residence, near the old one.

Since the old days of homesteading "Kootenay Brown" has been Game and Fish Guardian, and a Warden in Waterton Lakes National Park. He died in the summer of 1916 and his body lies beside that of his first wife, a half-breed woman, on his first homestead, by the shores of Lower Waterton Lake.

FARMERS' HOUSE PLANS

Continued from page 15



Upstairs of Last House on Page.

BUILDING PLANS

Owing to lack of space we were not able to get our barn and stable plans in this issue. Full attention is being outlined for these in the next two issues.—EDITOR.

BOYS' AND GIRLS' STOCK CLUB FOR LENNOX AND ADDINGTON

LAST spring Mr. Curran, agricultural representative for Lennox and Addington County, organized a Boys' and Girls' Pig Club. He has plans under way now for a Calf Club, a Sheep Club, and a Poultry Club. An interesting feature of the movement is the way the local banks helped.

"The Merchants' Bank financed the Pig Club," Mr. Curran says, "and it was so successful that the two other local banks wanted to get in. The local manager of the Merchants' Bank protested, and stated that they would finance all applications for the Pig Club no matter how numerous, thus freezing the other two banks out. The Royal Bank then asked if we could not organize some other kind of a club, and I suggested the Calf Club. They agreed to finance it and to deal with an unlimited number of applications so long as the applications were approved by the Agricultural Representative. We do not know how the Calf Club will work out, but we are planning to buy from one hundred to two hundred calves. We will distribute Shorthorns in the northern part of the county and Holstein in the southern section.

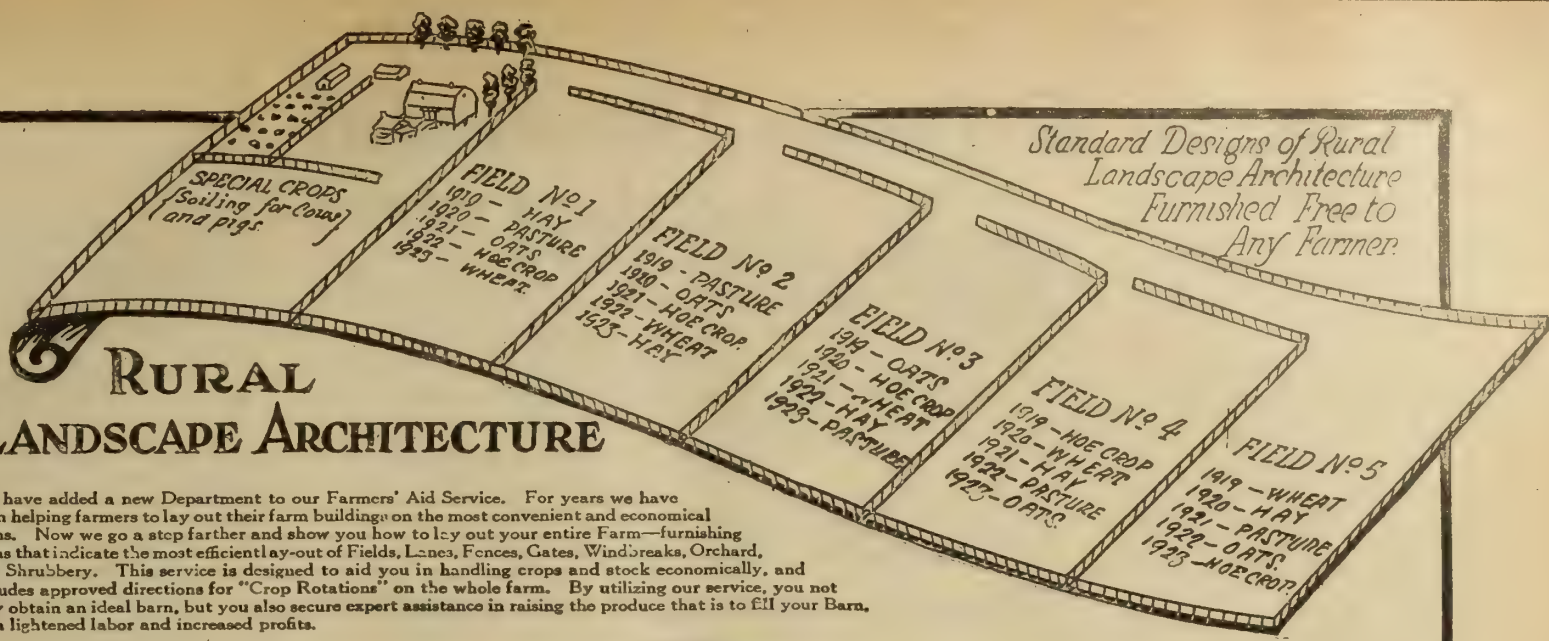
We are also planning to organize a Sheep Club on lines somewhat similar to the Calf Club and also to organize a Poultry Club. In the Poultry Club we are giving each child 1 colony brooder house, 100 baby chicks, 1 oil burning hover, 100 lbs. chick feed, and a complete equipment of feed hoppers, water fountains, automatic grain feeder, etc., to raise the chicks to maturity. In the fall the child will crate, fatten and sell the cockerels and some of the pullets. The proceeds from these should be nearly enough to pay for the entire cost of equipment, and the child will have, to start the next year, a pure-bred pen of 12 to 15 pullets, a good poultry house to keep them in during the winter, a complete equipment for brooding chicks the second summer. We are limiting the applications in the Poultry Club to 10 for 1919. If the plan is successful we intend to give outfits to all children who apply in 1920. In our Sheep Club we will give 2 pure-bred ewes, bred to lamb in April or May, to each child applying.

PLEASED WITH NEW SIZE

BRADLEY CREEK

Enclosed you will find postal note for one dollar and fifty cents ($1.50) being my renewal for the FARMERS' MAGAZINE *for 1919. I am well pleased with its increased size and the valuable articles are each sure worth the price of the Magazine.*

JOHN SHEPPARD.



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RURAL LANDSCAPE ARCHITECTURE

We have added a new Department to our Farmers' Aid Service. For years we have been helping farmers to lay out their farm buildings on the most convenient and economical plans. Now we go a step farther and show you how to lay out your entire Farm—furnishing plans that indicate the most efficient lay-out of Fields, Lanes, Fences, Gates, Windbreaks, Orchard, and Shrubbery. This service is designed to aid you in handling crops and stock economically, and includes approved directions for "Crop Rotations" on the whole farm. By utilizing our service, you not only obtain an ideal barn, but you also secure expert assistance in raising the produce that is to fill your Barn, with lightened labor and increased profits.

ALL THE FARM BUILDINGS FOR A 100 ACRE FARM FOR $2258

IMPLEMENT HOUSE

This building is framed, marked and ready to erect. A ready-made building—fire-proof, strong and tight. Safe against any storm. Read what is said of it by one farmer who recently bought one:

"The Ready-made Storehouse which I bought from you last Summer is all you claimed. I am perfectly satisfied with it in every way.

H. A. WATSON.

Snelgrove, Ont.
Feb. 9, 1917.

Could any recommendation be stronger than this letter expressing the satisfaction a Mount Pleasant man feels over the job we gave him? We have hundreds of such testimonials on file:

Dear Sirs:—

Mr. Rutherford finished the Barn on Saturday July 6th, and I am well satisfied with the job. I am proud of the Barn.

July 9, 1918. CARNET SHIELDS

PRESTON STEEL TRUSS BARNS

Our Barns have Steel Trusses, and price includes all lumber, siding, roofing, doors, windows and lightning protection. If you can supply any lumber, send us a list of what you have and we may be able to make a substantial allowance for it.

The Buildings we supply are designed to give you the greatest capacity at **the lowest cost.**

The Barn shown and described above is the strongest, neatest and best-protected Barn you can buy at any price—large enough to hold all the crops from the most fertile 100-acres you ever saw. The Price, $1,813, includes **Preston Lightning Protection System.** During the past six years we have erected hundreds of Preston Steel Truss Barns—and not one of these has been struck by lightning.

Get a Barn you will be proud of—use the coupon below. On receipt of your request, we promptly forward our big Barn Book and full particulars of our Product and our Service.

FARMER'S GARAGE

This garage comes to you ready to erect; every piece cut and marked. No saw required—you simply nail and bolt it together. High grade material throughout.

Read what a purchaser has to say.

"My garage cost me about half what a similar garage was advertised for, by another firm. It is large enough so I can run my 7 passenger car in.

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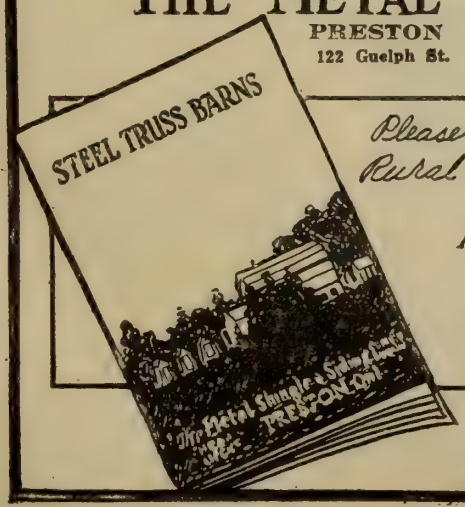

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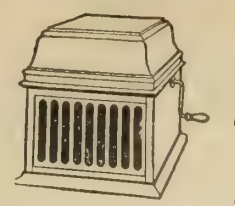

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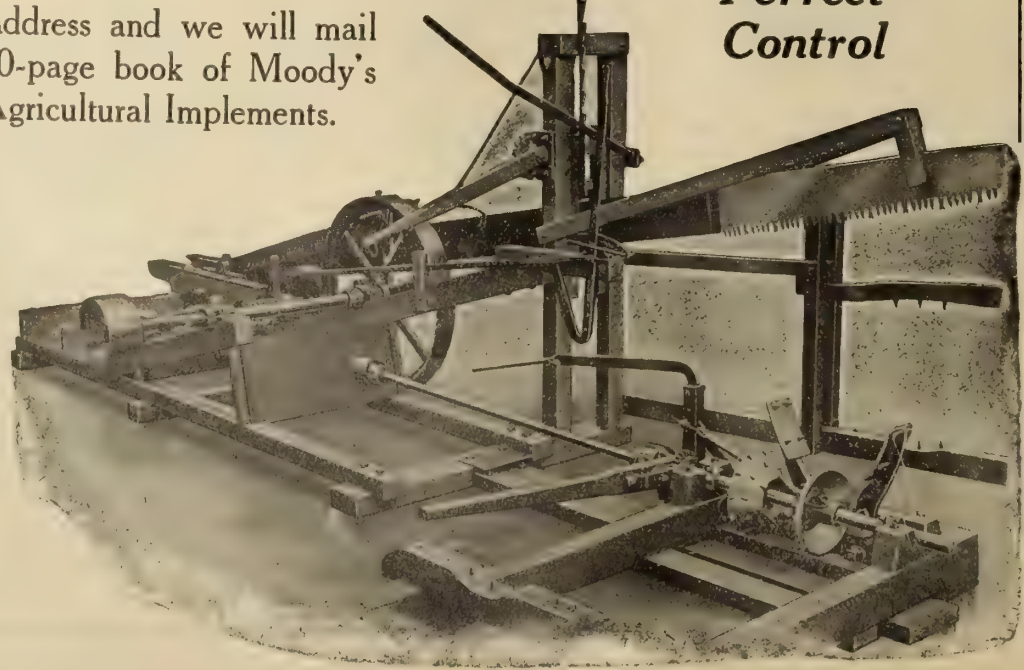

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IN the past Canada has been supplying over three-sevenths of the world's output of maple syrup and sugar, and if her production was in proportion to number of maple trees on her territory, the yield could easily be made five or six times as great as it is at present. It should be kept in mind that Canada and the United States have a "corner" on this industry and that they have no competitors, Nature having endowed them with a wealth of maple trees such as no other country in the world can boast. The demand for maple products, which always outdid the supply, has increased enormously during the past four years, for the Canadian soldiers have introduced maple sugar into English, French and Belgian homes and into the trenches, where it tasted like the nectar of the gods. The British Tommy is now asking for this same delicious sweet that he associates with Canada and an export trade of immense proportions can be built up, provided the Canadian farmer does his share.

In regions where the maple flourishes the industry is an old-established branch of farming. There are men who would no sooner neglect to tap their trees in spring than they would pass up the milking of their cows. There are plenty of others, however, who let year after year slip over their heads without paying any attention to the riches of the maple trees on their land, simply because their fathers never tapped them, or because they think it is too much bother to get out all the equipment and go through the whole process. Peter MacArthur's experience is fairly typical of many other localities in Canada. He says: "I estimate that there are fully 1,500 sugar maples within a radius of a mile of where I am writing. Not more than one-third of them are tapped any year." Plainly, this represents national and individual loss. We are talking a lot these days about reconstruction and the utilization of all our natural resources. What is the good of having water power, or productive land, or great forests, or maple trees if we have not willing hands ready to make use of them?

The average annual output of sugar and maple syrup in Canada, estimated in terms of sugar, is as follows:

	Pounds.
Maritime Provinces	500,000
Quebec	14,750,000
Ontario	5,000,000

There are three causes that prevent many farmers from getting the best results in the sugar bush. They are as follows: (1) Sap in some cases is kept too long before boiling; (2) Fuel is not sufficiently dry for making a good fire with a bright blaze; (3) Sap is boiled too deep and syrup is drawn off in too large quantities at a time from the evaporator.

Here are some good pointers which every one proposing to tap his trees might keep in mind:

Be in readiness to get the first run.

Have all utensils thoroughly cleaned and scalded.

Cut away the rough bark only, before tapping, leaving bark sufficiently thick to hold the spout firmly without leaking.

The finest flavor and lightest color are obtained by shallow tapping.

Gather often and boil at once. Delay detracts from the quality of the sugar.

Always strain the sap.

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Carrots	50
Onions	50
Indian Corn	56
Rye	56
Flax Seed	56
Artichokes	56
Wheat	60
Peas	60
Beans	60
Clover Seed	60
Potatoes	60
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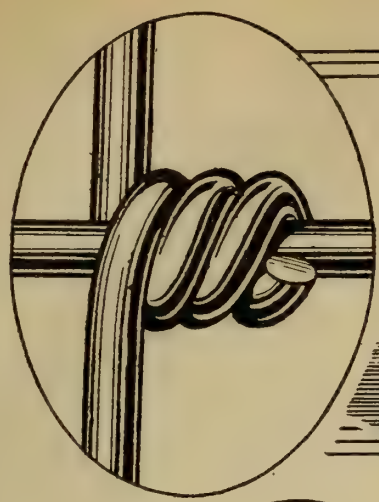

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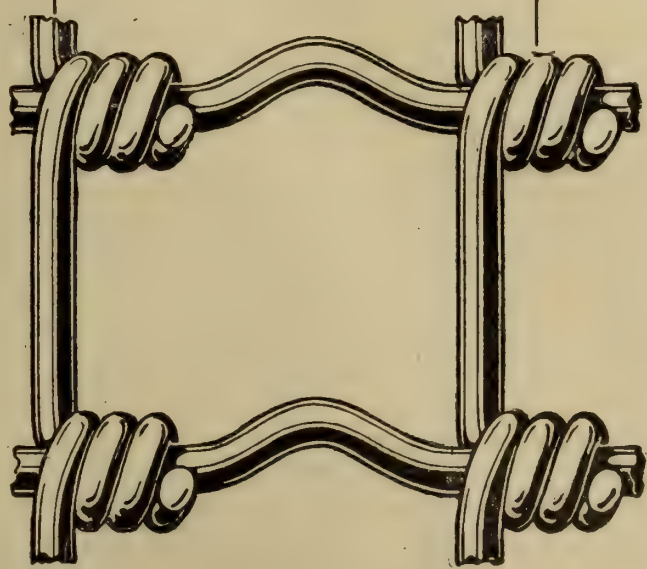

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5. It is made of full gauge wire throughout.
6. It is put up in full length rolls.
7. It is covered with a heavy coat of high-grade zinc.
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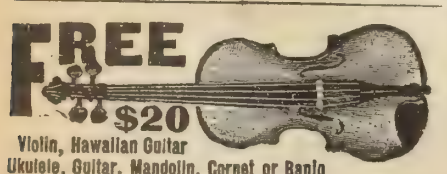

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

CHAPTER V—*Continued*

SLONE had never seen a trail as perilous as this. He was afraid for his horse. A slip there meant death. The way Nagger trembled in every muscle showed his feelings. But he never flinched. He would follow Slone anywhere, providing Slone rode him or led him. And here, as riding was impossible, Slone went before. If the horse slipped there would be a double tragedy, for Nagger would knock his master off the cliff. Slone set his teeth and stepped down. He did not let Nagger see his fear. He was taking the greatest risk he had ever run.

The break in the wall led to a ledge, and the ledge dropped from step to step, and these bad, bare, slippery slants between. Nagger was splendid on a bad trail. He had methods peculiar to his huge build and great weight. He crashed over the stone steps, both front hoofs at once. The slants he slid down on his haunches with his forelegs stiff and the iron shoes scraping. He snorted and heaved and grew wet with sweat. He tossed his head at some of the places. But he never hesitated and it was impossible for him to go slowly. Whenever Slone came to corrugated stretches in the trail he felt grateful. But these were few. The rock was like smooth red iron. Slone had never seen such hard rock. It took him long to realize that it was marble. His heart seemed a tense, painful knot in his breast, as if it could not beat, holding back in the strained suspense. But Nagger never jerked on the bridle. He never faltered. Many times he slipped, often with both front feet, but never with all four feet. So he did not fall. And the red wall began to loom above Slone. Then suddenly he seemed brought to a point where it was impossible to descend. It was a round bulge, slanting fearfully, with only a few little rough surfaces to hold a foot. Wildfire had left a broad, clear-swept mark at that place, and red hairs on some of the sharp points. He had slid down. Below was an offset that fortunately prevented further sliding. Slone started to walk down this place, but when Nagger began to slide Slone had to let go the bridle and jump. Both he and the horse landed safely. Luck was with them. And they went on, down and down, to reach the base of the great wall, scraped and exhausted, wet with sweat, but unhurt. As Slone gazed upward he felt the impossibility of believing what he knew to be true. He hugged and petted the horse. Then he led on to the roaring stream.

It was green water white with foam. Slone waded in and found the water cool and shallow and very swift. He had to hold to Nagger to keep from being swept downstream. They crossed in safety. There in the sand showed Wildfire's tracks. And here were signs of another Indian camp, half a year old.

The shade of the cottonwoods was pleasant. Slone found this valley oppressively hot. There was no wind and the sand blistered his feet through his boots. Wildfire held to the Indian trail that had guided him down into this wilderness of worn rock. And that trail crossed the stream at every turn of the twisting, narrow valley. Slone enjoyed getting into the water. He hung his gun over the pommel and let the water roll him. A dozen times he and Nagger forded the rushing torrent. Then they came to a box-like closing of the valley to canon walls, and here the trail evidently followed the stream bed. There was no other way. Slone waded in, and stumbled, rolled, and floated ahead of the sturdy horse. Nagger was wet to his breast, but he did not fall. This gulch seemed full of a hollow, rushing roar. It opened out into a wide valley. And Wildfire's tracks took to the left side and began to climb the slope.

Here the traveling was good, considering what had been passed. Once up out of the valley floor Slone saw Wildfire far ahead, high on the slope. He did not appear to be limping, but he was not going fast. Slone watched as he climbed. What and where would be the end of this chase?

Sometimes Wildfire was plain in his sight for a moment, but usually he was hidden by rocks. The slope was one great talus, a jumble of weathered rock, fallen from what appeared a mountain of red and yellow wall. Here the heat of the sun fell upon him like fire. The rocks were so hot Slone could not touch them with bare hand. The close of the afternoon was approaching, and this slope was interminably long. Still, it was not steep, and the trail was good.

At last from the height of slope Wildfire appeared, looking back and down. Then he was gone. Slone plodded upward. Long before he reached that summit he heard the dull rumble of the river. It grew to be a roar, yet it seemed distant. Would the great desert river stop Wildfire in his flight? Slone doubted it. He surmounted the ridge, to find the canon opening in a tremendous gap, and to see down, far down, a glittering, sun-blasted slope merging into a deep, black gulch where a red river swept and chafed and roared.

Somehow the river was what he had expected to see. A force that had cut and ground this canon could have been nothing but a river like that. The trail led down, and Slone had no doubt that it crossed the river and led up out of the canon. He wanted to stay there and gaze endlessly and listen. At length he began the descent. As he proceeded it seemed that the roar of the river lessened. He could not understand why this was so. It took half an hour to reach the last level, a ghastly, black, and iron-ribbed canon bed, with the river splitting it. He had not had a glimpse of Wildfire on this side of the divide, but he found his tracks, and they led down off the last level, through a notch in the black bank of marble to a sand-bar and the river.

Wildfire had walked straight off the sand into the water. Slone studied the river and shore. The water ran slow, heavily, in sluggish eddies. From far up the canon came the roar of a rapid, and from below the roar of another, heavier and closer. The river appeared tremendous, in ways Slone felt rather than realized, yet it was not swift. Studying the black, rough wall of rock above him, he saw marks where the river had been sixty feet higher than where he stood on the sand. It was low, then. How lucky for him that he had gotten there before flood season! He believed Wildfire had crossed easily, and he knew Nagger could make it. Then he piled and tied his supplies and weapons high on the saddle, to keep them dry, and looked for a place to take to the water.

Wildfire had sunk deep before reaching the edge. Manifestly he had lunged the last few feet. Slone found a better place, and waded in, urging Nagger. The big horse plunged, almost going under, and began to swim. Slone kept up-stream beside him. He found, presently, that the water was thick and made him tired, so it was necessary to grasp a stirrup and be towed. The river appeared only a few hundred feet wide, but probably it was wider than it looked. Nagger labored heavily near the opposite shore; still, he landed safely upon a rocky bank. There were patches of sand in which Wildfire's tracks showed so fresh that the water had not yet dried out of them.

Slone rested his horse before attempting to climb out of that split in the rock. However, Wildfire had found an easy ascent. On this side of the canon the bare rock did not predominate. A clear trail led up a dusty, gravelly slope, upon which scant greasewood and cactus appeared. Half an hour's climbing brought Slone to where he could see that he was entering a vast valley, sloping up and narrowing to a notch in the dark cliffs, above which towered the great red wall and about that the slopes of cedar and the yellow rim-rock.

And scarcely a mile distant, bright in the westering sunlight, shone the red stallion, moving slowly.

Slone pressed on steadily. Just before dark he came to an ideal spot to camp. The valley had closed up, so that the lofty walls cast shadows that met. A clump of cottonwoods surrounding a spring, abundance of rich grass, willows and flowers lining the banks, formed an oasis in the bare valley. Slone was tired out from the day of ceaseless toil down and up, and he could scarcely keep his eyes open. But he tried to stay awake. The dead silence of the valley, the dry fragrance, the dreaming walls, the advent of night low down, when up on the ramparts the last red rays of the sun lingered, the strange loneliness—these were sweet and comforting to him.

And that night's sleep was as a moment. He opened his eyes to see the crags and towers and peaks and domes, and the lofty walls of that vast, broken chaos of canons across the river. They were now emerging from the misty gray of dawn, growing pink and lilac and purple under the rising sun.

He arose and set about his few tasks, which being soon finished, allowed him an early start.

Wildfire had grazed along no more than a mile in the lead. Slone looked eagerly up the narrowing canon, but he was not rewarded by a sight of the stallion. As he progressed up a gradually ascending trail he became aware of the fact that the notch he had long looked up to was where the great red walls closed in and almost met. And the trail zigzagged up this narrow vent, so steep that only a few steps could be taken without rest. Slone toiled up for an hour— an age—till he was wet, burning, choked, with a great weight on his chest. Yet still he was only half-way up that awful break between the walls. Sometimes he could have tossed a stone down upon a part of the trail, only a few rods below, yet many, many weary steps of actual toil. As he got farther up the notch widened. What had been scarcely visible from the valley below

SYNOPSIS

THE story opens at Bostil's Ford, in the wild country of the Colorado River. Bostil is a rancher whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen.

The story is at present concerned with the adventures of Lin Slone, a daring wild horse hunter, far away in the uplands of Utah. For the past six weeks, in the company of two others, he has been trailing a magnificent wild stallion, which he has named Wildfire. Supplies are giving out and the two others have now abandoned the quest, leaving Slone to go on alone. Wildfire's tracks lead on into new and unfamiliar country and on the third morning Slone realizes that he has reached the Grand Canon of Colorado. He commences the perilous descent and the next day catches a glimpse of Wildfire, who seems to be walking lame. Wildfire, conscious of the pursuit, descends an almost sheer precipice and Slone, despite the danger to himself and his horse, Nagger, prepares to follow.

was now colossal in actual dimensions. The trail was like a twisted mile of thread between two bulging mountain walls leaning their ledges and fronts over this tilted pass.

Slone rested often. Nagger appreciated this and heaved gratefully at every halt. In this monotonous toil Slone forgot the zest of his pursuit. And when Nagger suddenly snorted in fright Slone was not prepared for what he saw.

Above him ran a low, red wall, around which evidently the trail led. At the curve, which was a promontory, scarcely a hundred feet in an airline above him, he saw something red moving, bobbing, coming out into view. It was a horse.

Wildfire—no farther away than the length of three lassoes!

There he stood looking down. He fulfilled all of Slone's dreams. Only he was bigger. But he was so magnificently proportioned that he did not seem heavy. His coat was shaggy and red. It was not glossy. The color was what made him shine. His mane was like a crest, mounting, then falling low. Slone had never seen so much muscle on a horse. Yet his outline was graceful, beautiful. The head was indeed that of the wildest of all wild creatures—a stallion born wild—and it was beautiful, savage, splendid, everything but noble. Whatever Wildfire was, he was a devil, a murderer—he had no noble attributes. Slone thought that if a horse could express hate, surely Wildfire did then. It was certain that he did express curiosity and fury.

Slone shook a gauntleted fist at the stallion, as if the horse were human. That was a natural action for a rider of his kind. Wildfire turned away, showed bright against the dark background, and then disappeared.

CHAPTER VI.

THAT was the last Slone saw of Wildfire for three days.

It took all of this day to climb out of the canon. The second was a slow march of thirty miles into a scrub cedar and pinon forest, through which the great red and yellow walls of the canon could be seen. That night Slone found a water-hole in a rocky pocket and a little grass for Nagger. The third day's travel consisted of forty miles or more through level pine forest, dry and odorous, but lacking the freshness and beauty of the forest on the north side of the canon. On this south side a strange feature was that all the water, when there was any, ran away from the rim. Slone camped this night at a muddy pond in the woods, where Wildfire's tracks showed plainly.

On the following day Slone rode out of the forest into a country of scanty cedars, bleached and stunted, and out of this to the edge of a plateau, from which the shimmering desert flung its vast and desolate distances, forbidding and menacing. This was not the desert upland country of Utah, but a naked and bony world of colored rock and sand—a painted desert of heat and wind and flying sand and waterless wastes and barren ranges. But it did not daunt Slone. For far down on the bare, billowing ridges moved a red speck, at a snail's pace, a slowly moving dot of color which was Wildfire.

On open ground like this, Nagger, carrying two hundred and fifty pounds, showed his wonderful quality. He did not mind the heat nor the sand nor the glare nor the distance nor his burden. He did not tire. He was an engine of tremendous power.

Slone gained upon Wildfire, and toward evening of that day he reached to within half a mile of the stallion. And he chose to keep that far behind. That night he camped where there was dry grass, but no water.

Next day he followed Wildfire down and down, over the endless swell of rolling red ridges, bare of all but bleached white grass and meager greasewood, always descending in the face of that painted desert of bold and ragged steps. Slone made fifty miles that day, and gained the valley bed, where a slender

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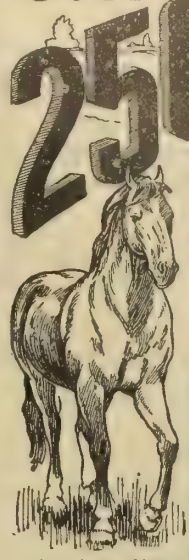

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Must Supply Credits

How is Canada to supply the necessary credits and finance this international trade? From the invested savings of her people.

The plan has been most carefully worked out. If the Canadian people co-operate to the utmost of their ability, the markets are assured, the people profit by their investment, their money is available when needed, and since Canada will, in due course, receive back the money advanced to the buying nations, not a dollar is added to the permanent indebtedness of the country.

$5.00 for $4.01

The Dominion of Canada is raising the necessary money by the sale of War-Savings Stamps.

In your own interest, buy War-Savings Stamps. Get every man, woman and child you can talk to, to buy War-Savings Stamps. The price this month is $4.01.

Each stamp will be redeemed on Jan. 1st, 1924, by the Dominion of Canada, for $5.00.

As an aid to the purchase of a War-Savings Stamp, you can buy Thrift Stamps at 25 cents each. Sixteen Thrift Stamps on a Thrift Card represent $4.00 on the purchase of a W-S.S.

W-S.S. and Thrift Stamps may be purchased at Money-Order Post Offices, Banks, and other places displaying the sign at the top of this announcement.

50

Over There— Over Here

STAG Chewing Tobacco is appreciated by both of Canada's war units —those who fought in Flanders and those who served at home.

It is also enjoyed by civilians of all classes throughout Canada and is recognized as being

"Ever-lasting-ly Good"

stream ran thin and spread over a wide sandy bottom. It was salty water, but it was welcome to both man and beast.

The following day he crossed, and the tracks of Wildfire were still wet on the sand-bars. The stallion was slowing down. Slone saw him, limping along, not far in advance. There was a ten-mile stretch of level ground, blown hard as rock, from which the sustenance had been bleached, for not a spear of grass grew there. And following that was a tortuous passage through a weird region of clay dunes, blue and violet and heliotrope and lavender, all worn smooth by rain and wind. Wildfire favored the soft ground now. He had deviated from his straight course. And he was partial to washes and dips in the earth where water might have lodged. And he was not now scornful of a green-scummed water-hole with its white margin of alkali. That night Slone made camp with Wildfire in plain sight. The stallion stopped when his pursuers stopped. And he began to graze on the same stretch with Nagger. How strange this seemed to Slone!

Here at this camp was evidence of Indians. Wildfire had swung round to the north in his course. Like any pursued wild animal, he had begun to circle. And he had pointed his nose toward the Utah he had left.

Next morning Wildfire was not in sight, but he had left his tracks in the sand. Slone trailed him with Nagger at a trot. Toward the head of this sandy flat Slone came upon old cornfields, and a broken dam where the water had been stored, and well-defined trails leading away to the right. Somewhere over there in the desert lived Indians. At this point Wildfire abandoned the trail he had followed for many days and cut out more to the north. It took all the morning hours to climb three great steps and benches that led up to the summit of a mesa, vast in extent. It turned out to be a sandy waste. The wind rose and everywhere were moving sheets of sand, and in the distance circular yellow dust-devils, rising high like water-spouts, and back down in the sun-scorched valley a sand-storm moved along majestically, burying the desert in its yellow pall.

Then two more days of sand and another day of slowly rising ground growing from bare to gray and gray to green, and then to the purple of sage and cedar—these three grinding days were toiled out with only one water-hole.

And Wildfire was lame and in distress and Nagger was growing gaunt and showing strain; and Slone, haggard and black and worn, plodded miles and miles on foot to save his horse.

Slone felt that it would be futile to put the chase to a test of speed. Nagger could never head that stallion. Slone meant to go on and on, always pushing Wildfire, keeping him tired, wearied, and worrying him, till a section of the country was reached where he could drive Wildfire into some kind of a natural trap. The pursuit seemed endless. Wildfire kept to open country where he could not be surprised.

There came a morning when Slone climbed to a cedared plateau that rose for a whole day's travel, and then split into a labyrinthine maze of canons. There were trees, grass, water. It was a high country, cool and wild, like the uplands he had left. For days he camped on Wildfire's trail, always relentlessly driving him, always watching fir the trap he hoped to find. And the red stallion spent much of this time of flight in looking backward. Whenever Slone came in sight of him he had his head over his shoulder, watching. And on the soft ground of these canons he had begun to recover from his lameness. But this did not worry Slone. Sooner or later Wildfire would go down into a high-walled wash, from which there would be no outlet; or he would wander into a box-canon; or he would climb out on a mesa with no place to descend, unless he passed Slone; or he would get cornered on a soft, steep slope where his hoofs would sink deep and make him glow.

To be continued.

POULTRY

Is the Hundred Egg Hen General?

By IVOR C. BICE

THE year just finished was something in the nature of a try-out for the farm flocks. The hens were about the first thing retrenched on—they were up against wheatless and meatless days, and in a number of cases that I know of, as soon as the usual fall shrinkage in the egg supply began, the hens were mostly *up against the axe.* This was all right in cases where the flocks never produced an egg from fall to spring, but it would be the part of wisdom to replace these non-layers with stock bred to an all-the-year production. I find that few farmers care to spend money on pure-bred fowl, thinking there isn't time to take proper care of them, and that the hen is such an "unreliable critter," anyway, that much money spent in trying to keep up a flock of pure-breds is mostly wasted. I have nothing to say on that score since my hens are not pure-bred, but I could say a lot in favor of the bred-to-lay hens such as can be secured through rigid culling, selection, and the introduction of new blood of the same type. All the hen needs is fair-play and the same amount of care that is given to the successful raising of calves and pigs, and she will not only pay her way but also make a nice profit for her owner.

Paid Well With Dear Grain

My hens have not made any sensational records during the past year but I consider they have justified their being kept and fed well even though grain was dear. I find they made a profit for every month except two for eggs alone. The two months were January and December. The year's yield lacked only two eggs of being 1,436 dozen—the greatest period of production being April with 261 dozen and 3 eggs and May with 216 dozen. The smallest supply was in December with 42 dozen and 7 eggs. January's supply was 42 dozen which did not quite pay the feed bill for that month.

All the hens over three years-old were marketed at the same time as the chickens and the lot brought in a little over $150.00. There were about fifty head—comprising the year-old roosters, a few fat hens and a few chickens—used on the table, and the 2-year-old hens, one-year-old hens and pullets kept, bring the flock up to about 200. I might mention here, that the system of banding the legs enables one to tell the age of a hen at a glance and saves a lot of time when culling time comes in the fall. There was no wheat used after the hens were let out on range with their broods and in the fall the chickens were fattened on ground barley with a little ground oats and low-grade flour, (a half-sack left over from the year before), mixed with sour milk or warm dish-water. They were also fed about two pailfuls a day of corn on the cob. A number of Barred Rock cockerels, at six months old, weighed a little over six pounds each when dressed, so I considered the feed was alright. Before this I always thought wheat a necessary item at fattening time.

Can Breed Up a Type

Now an examination of my figures will show that my hens did not average a hundred eggs each—there were about 180 hens last yer—yet there is a substantial profit for every month in the year except for two, and there were eggs every month, fresh, reliable eggs for table use, produced more cheaply than I could buy them, and everyone will agree with me that eggs are a necessity. Moreover, I have my flock of hens "to the good." Larger quarters for the hens would very likely bring up the average production but I didn't see my way clear to build new houses. However, even though crowded somewhat during cold weather, the flock increased on the yield of the year before by some ten dozen eggs, which gives me the idea that I am on the right track in the matter of type.

My method of culling the pullets is quite simple—no long-legged ones are ever kept, nor any that are not sturdy-looking. I believe in keeping the hens as warm as possible in winter, with plenty of grit and water handy, also milk if any can be had, and all the ashes available for dust-baths. There are cabbages or mangels for green feed, also all the clover leaves and heads that fall off the hay as it is moved around in the barn, and whole or rolled oats, corn on the cob, and ground barley for a warm mash about noon. In the fall all the potatoes—split pieces left by the plow and those the size of marbles—are put in the cellar. I have never known these to rot and they are all cooked for the hens, which saves a lot of grain. The only thing bought is oyster shell and hens should have plenty of that if they are to produce eggs in winter.

Eat a Great Many Bugs

There are a great many ways in which hens are of value to the farmer, but they are particularly useful in destroying large numbers of injurious insects every year in orchard and fields. I have seen hens refuse to come at feeding time to get their share of grain, and watching showed them finally going to roost at dusk, with crops distended to almost bursting point with all sorts of insects and grubs gathered from the meadow near the barn. I am always glad when I happen to get one of these foragers off with a big family of chickens—they are such grain-savers.

I am hoping that some farmer, reading this article, will tell us in an early issue of the FARMERS' MAGAZINE whether he has been able to get his flock up to the 100-a-year, or over, point of egg production, and particularly how he managed it and at what cost. It would be of value to me and doubtless to many others who are working for increased production at lowest possible cost.

WHY HATCH EARLY?

By H. W. SANBORN

Early hatching means more vigorous chicks.

Early hatching means more chicks raised.

Early hatching means chicks less troubled by lice and disease.

Early hatching means a longer growing season.

Early hatching means better grown chicks.

Early hatching means higher prices for the surplus and for cockerels marketed as broilers.

Early hatching means well matured pullets which begin to lay in the fall.

Early hatching means eggs from the pullets while the hens are moulting.

Early hatching means eggs in the fall and winter when prices are highest.

The real customers of farmers are the workers in the towns, who form the vast majority of the consumers, and it would be to the interest of farmers to get into direct and friendly relations with their real customers.

—GEORGE W. RUSSELL.

POULTRY BOOK Latest and best yet; 144 pages, 216 beautiful pictures and color plates. Hatching, rearing, feeding and disease information; describes the busy Poultry Farm handling 53 varieties including Indian Runners. Tells how to properly choose fowls, eggs, incubators, cheap feed and PURE-BRED BABY CHICKS. This practical book worth dollars mailed for 10 cents. Berry's Poultry Farm, Box 102, Clarinda, Iowa

Gunns "Shur-Gain" FERTILIZERS

The farmer who delays in ordering his Gunns "Shur-Gain" Fertilizer in the expectation of lower prices is risking going short of this vital fertility-renewer without any ultimate benefit. We base our prices on material and labor costs entirely and there can be no change affecting this season's supplies.

Gunns "Shur-Gain" Fertilizers are compounded from exact knowledge of Canadian crop conditions. If you want your mind easy on a big and easily sold crop this year, write to-day for Gunns prices, discounts and booklet.

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"Making two blades grow where only one grew before"

HAVE YOU ELECTRICITY OF ANY KIND?

If so, hatch your chicks with the Armstrong Electric Incubator. Its advantages are: No danger of fire, no fumes, no trimming lamps, good ventilation and moisture, self-regulating. It has been in use four years and is recommended by experimental farms and well-known breeders everywhere. Send for booklet telling all about incubators and why the Armstrong does better work than the old style. Read testimonials from Canadians you know. Prices are no higher than those of good oil machines. Get busy to-day and raising chickens will become a profitable pleasure.

My electric hover is just as big an improvement as the incubator. Get one of each. Write to-day for all information

G. F. ARMSTRONG, 214 Aberdeen Avenue, Hamilton, Ontario

130-Egg Incubator and Brooder Both For $17.50

If ordered together we send both machines for only $17.50 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of $17.50 is for both Incubator and Brooder and covers freight and duty [illegible] Send for FREE catalog today, or send in your order and save time.

FREIGHT AND DUTY PAID

Write us today. Don't delay. WISCONSIN INCUBATOR CO., Box 204 Racine, Wis., U. S. A.

These Wonderful Metal Hens

will hatch every hatchable egg. Just costs one gallon of oil and a little common-sense to hatch one batch of 60. Full directions with each machine. A beginner will have success from the start. Price: Incubator, $8.00; Incubator and Brooder combined, $10.00. Write for catalogue. "Toronto, Feb. 3, 1919. Hatched 46 chicks first time. Yours truly, Mrs. McDougall, 1009 St. Clarens Ave."

COLLINS MFG. CO., 411 Symington Ave., TORONTO, ONTARIO

"Best-by-Test" FERTILIZERS

This brand of fertilizer is noted for high plant food value and the analyses are guaranteed by us and by Government regulation to be full strength. We have the right Fertilizer for every soil and every crop. Make your farm a good farm; make your yields big on every acre and for every crop. You can do it by judicious use of Best-by-Test Fertilizers. Get your order in early; don't take a chance on a shortage. Farmers should club together and order in car load lots.

Write particulars of your soil and the crop you will plant, and we will give you the best advice we can, as to the kind, quantity and price.

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Write For Booklet—FREE

CANADIAN FERTILIZER CO. LIMITED
22 Market Chambers
CHATHAM, ONT.

The Greatest Hour of the Dairy Farmer

NOW that the war is over, the farmer's responsibility and opportunity are greater than ever---for the North American farmer and dairyman must literally feed the world. It means greater production and getting the *most* out of that production. Waste is as unpatriotic now as it was during the war.

But there is many a farmer who would not think of planting a hundred rows of corn and only harvesting 95 rows, who is now using a fixed feed separator and wasting a good part of his butterfat through turning under speed. Even tho the proper separating speed is marked on the handle, tests show that 95 per cent of *all* separators are turned below speed. If you turn a Sharples Suction-feed Separator below speed, you skim clean just the same—due to the patented suction feed. No other separator has this principle.

SHARPLES SUCTION-FEED CREAM SEPARATOR

"Skims Clean at Any Speed"

Sharples is the pioneer North American Separator—invented, perfected and preferred in North America. It is the product of the greatest factory of its kind in North America. Write for the interesting, profitable Sharples story and Sharples Book of Old Songs. It's free. Address nearest office, Dept. 153

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For sale—Twelve bulls, 9 to 15 mos. old, some of them choice prospects for pure-bred herd headers, winners themselves, sired by champions and from good dams. Could also supply females not related. Write your wants. Visitors welcome.

G. C. CHANNON,
P.O. and Phone, Oakwood, Ont.
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Clipped Army Horses

Veterinarians of the Allied Armies ordered regular clipping of the horses and mules in all branches of the service. They were clipped with the Stewart No. 1 machine. YOUR horses also will do better work if clipped. Get a Stewart Ball Bearing Machine from your dealer. If he can't supply you send us his name. Write for 1919 catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. 165, 12th Street and Central Ave., Chicago

DAIRYING

DAIRY CATTLE

DAIRY cattle in Canada are holding the attention of farmers in every province. The good prices prevailing during the war and the help of machinery have contributed to offset the labor shortages. Besides this, urban consumption is demanding more whole milk. Condenseries and milk powder factories are keeping dairy herds active in many counties where the whole milk trade was unknown a few years ago. There is no more surer business for the young farmer than the dairy business.

Further particulars can be seen in the dairy department in this issue.

DAIRY CATTLE REGISTRATIONS

Breed—	1916	1917	1918
Holstein	11,053	12,019	13,046
Ayrshire	4,000	4,568	4,475
Jersey	1,308	1,703	1,519
Guernsey	146	183	159
Fr. Canadian	268	327	351

MILCH COWS IN CANADA

Provinces and all Canada.	1914	1917	1918
P. E. Island	47,317	46,032	41,429
Nova Scotia	128,237	131,442	157,829
N. Brunswick	102,713	100 221	120,123
Quebec	733,476	652,600	1,163 865
Ontario	1,085,843	1,082,119	1,102,039
Manitoba	156,306	164,052	225,659
Saskatchewan	104,624	229,142	352 989
Alberta	179,068	193,851	328,702
B. Columbia	35,702	43,250	50,965
Canada	2,673,286	2,642,709	3,543,600

PROGRESS OF THE HOLSTEIN-FRIESIANS

By W. A. Clemens

IN spite of the fact that our dairy farmers have been badly handicapped by scarcity of labor, high prices of feed and other war-time conditions, the Holstein-Friesian breed is making extraordinary progress in Canada, as well as in the United States, Great Britain, New Zealand, South Africa and other countries. Both in Canada and the United States the registrations of Holsteins now outnumber those of all the other dairy breeds combined, and the number of transfers is in similar proportion. The following figures for 1917 (those for 1918 are not yet available) show very clearly the manner in which the Black-and-Whites are drawing away from their competitors in Canada:

Breed	Registrations	Transfers
Holstein-Friesians	12019	10656
Ayrshires	4368	3205
Jerseys	1703	1151
Guernseys	183	55
French Canadians	327	190

The following figures for the past four years will show the steady gain in the business of the Holstein-Friesian Association in registrations, transfers, new members and financial strength:

Year	Reg.	Trans.	New Mem.	Net Assets
1915	10260	7813	320	$18,596.18
1916	11053	9544	294	20,671.61
1917	12019	10656	382	24,680.24
1918	13046	12165	432	27,731.11

At the end of 1918, our registrations had reached a total of 100,725, about 54 per cent. of which have been made within the last five years. We have now nearly 3,000 members, over half of which have joined within five years. These facts are pretty conclusive evidence that our breed is very much alive in Canada and that we have a great future before us.

The World Hungry For Holsteins

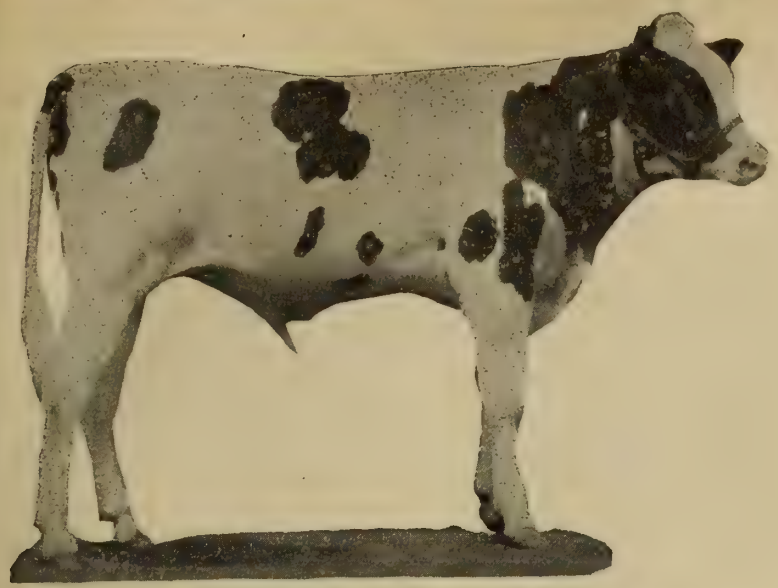
In the last two or three years Holsteins have been getting an extraordinary hold on the dairy farmers of Great Britain. Prices have been increasing at a wonderful rate. a cow having been sold recently in England for $22,500, world's record price for a female of the breed. The same state of affairs is found in South Africa, in which Dominion prices are going up by leaps and bounds, a young bull fetching $16,000 at auction. Breeders in that country, who formerly bought stock in Holland, are now looking to Canada for cattle, as Holland has no available surplus. Indeed, only a few months ago the American Government received an order for 5,000 purebreds for shipment to Holland, an order which was declined on account of scarcity of ships. Representatives of the French Government are now purchasing Holsteins in the United States to re-stock the devastated areas in their country. Belgian officials have toured Canada and the United States, visiting the leading herds and getting ready to buy as soon as conditions warrant it. According to report, they will take 20,000 purebreds and 100,000 grades. Serbia wants 50,000 grade heifers and Roumania is also inquiring for Canadian Holsteins. New Zealand and Australia are looking to Canada for purebreds and some orders have already been placed. The American papers report a strong demand from the Panama Canal zone and from South American countries. Taking all these circumstances into consideration, we believe we are justified in anticipating a greater trade in Holsteins than we have ever seen before.

Making World's Records For Milk and Butter

Practically all world's records for milk and butter for all periods from one day up to six years are held by Holstein-Friesians. The only 50-pound cow in the world, Segis Fayne Johanna, with 50.68 pounds butter in 7 days, is a Holstein. Forty-pound cows are becoming quite common. Quite a number of Holsteins have milked over 30,000 pounds milk and made over 1,200 pounds butter in a year. The California cow, Tilly Alcartra, has recently completed a record that stands unequalled in the world. She has been under test ever since first freshening as a two-year-old, and in six years has given 156,776.1 pounds milk and 6,142.12 pounds butter, an average for each year of 26,129.3 pounds milk and 1,023.1 pounds butter. During the year just finished she gave 33,424.8 pounds milk and 1,323.00 pounds butter. Canada has been doing her share in making big records. We have two forty-pound cows, and considerably over one hundred thirty-pound cows. Cows that have given 100 pounds milk in one day and 20,000 pounds of milk in a year are to be found in goodly numbers. May Echo Sylvia holds all records for milk from one to one hundred days, giving 152.1 pounds milk in one day and 12,899.8 pounds in one hundred days. Her butter record for one hundred days is 505.34 pounds, about double the production of the average cow in a year. Zarilda Clothilde 3rd DeKol holds the world's record for milk in 365 days under strictly official test for the whole year with 30,467 pounds. Colony Aaggie Pietertje is world's champion two-year-old under strictly official test, making as a junior two-year-old 21,161.8 pounds milk and 881.84 pounds butter in a year. Het Loo Pietertje is world's champion junior two-year-old for butter, with 30.32 pounds in seven days, 122.01 pounds in thirty days, and 223.26 pounds in sixty days. Mildred Pietertje Abbekerk is world's champion senior four-year-old for milk in seven and thirty days, with 856.9 pounds for the former and 3,569.2 pounds for the latter period. Not a bad showing for Canada, is it?

Some notable records made in Canada during the year 1918 were those of Lakeview Dutchland Artis with 43.05 pounds butter in seven days, and of Lakeview Dutchland Calamity Rose with 31.71 pounds butter in seven

Holsteins Lead in Production and Profit



A $106,000 BULL CALF

Carnation King Sylvia, six months of age, sold at the National Holstein sale in Milwaukee in June, 1918, for $106,000. He is a son of May Echo Sylvia, the world's champion milker, and is sired by a grandson of his dam. The price is the highest ever paid for an individual of any breed.

HET LOO PIETERTJE 38502

World's junior champion two-year-old for butter for seven, thirty and sixty days. Record for seven days, 30.32 lbs. butter from 578 lbs. milk; thirty days, 122.01 lbs. butter from 2,362.6 lbs. milk; sixty days, 223.26 lbs. butter from 4,561.1 lbs. milk. She was sold at auction at the National Sale, Milwaukee, June, 1918, for $12,750.

HOLSTEINS

HOLD ALL CHHMPIONSHIPS

World's Record price for cattle—Carnation King Sylvia $106,000
World's Record for Butter, one year—Duchess Skylark Ormsby ...1,506.36 lbs.
World's Record for Milk, one year—Lutscke Vale Corucopia .....31,246.9 lbs.
World's Record for Butter, seven days—Segis Fayne Johanna .....50.68 lbs.
World's Record for Milk—seven days—May Echo Sylvia' ..... 1,005.8 lbs.
Canadian Record for Butter, one year—Lady Pietje Canary's Jewel..1,173.66 lbs.
Canadian Record for Milk, one year—Zarlida Clothilde 3rd De Kol ....30,467.0 lbs.

INFORMATION FROM THE

Holstein-Friesian Association

President, DR. S. F. TOLMIE, M.P.
Victoria, B.C.
Secretary, W. A. CLEMONS
St. George, Ont.

LULU KEYES 10333

A cow of almost perfect Holstein type. 7 days record, milk, 785.4 lbs., butter, 36.05 lbs.; 30-day record, milk, 3,191.8 lbs., butter, 144.39 lbs.; year's record made at 2 years, milk, 19,258.4 lbs., butter, 678.34 lbs.; 1-day record, milk, 121.3 lbs.

Hoard's Dairymen says that cows have a pull—you can tell that by the way some of them lift mortgages off farms. But pure-bred Holsteins don't have to depend on pull at all. They push their owners into fame and prosperity right off the bat. If there is one thing an old mortgage is afraid of it's a Holstein cow. As soon as the latter arrives on the premises, the heretofore bossy mortgage is seen to shrink up and get so little and puny that in a few months, there's nothing left of it. Oh yes—the Holstein is the original mortgage pusher.

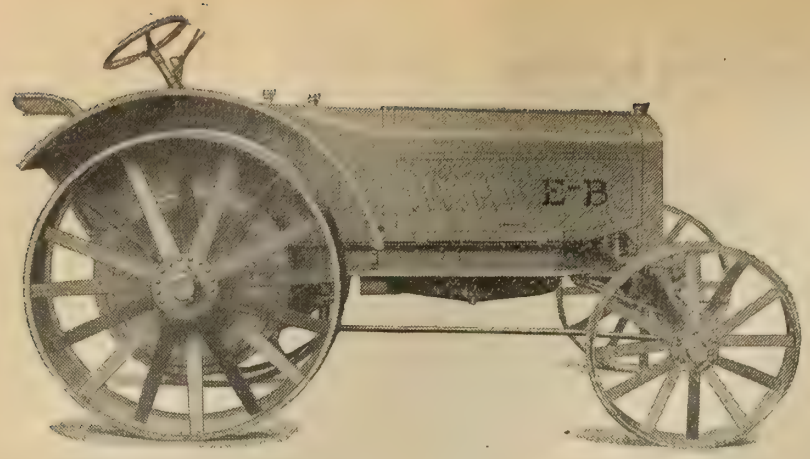
If You Can't Buy a Herd, Buy a Heifer

MAY ECHO SYLVIA 11385

The greatest milk producer the world has ever known. Official milk record for 1 day, 152.1 lbs.; 7 days, 1,005.8 lbs.; 30 days, 4,196.9 lbs.; 60 days, 8,220.1 lbs.; 90 days, 11,855.1 lbs.; 100 days, 12,899.8 lbs. Official butter record for 7 days, 41.00 lbs.; 30 days, 169.72 lbs.; 60 days, 328.32 lbs.; 90 days, 463.67 lbs.; 100 days, 505.34 lbs.

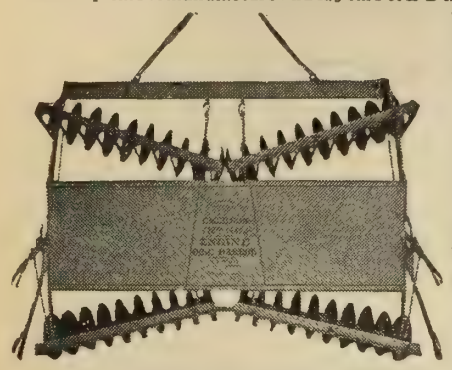
MADAM POSCH PAULINE 10291

Former Canadian champion for seven days in the mature class. Record for seven days, 34.28 lbs. butter from 835.6 lbs. milk. Official record for one year, 1,123.53 lbs. butter from 27,597.4 lbs. milk.



USE E-B 12-20, S. A. E. Rating, Model A A with the E-B No. 60 Engine Disc Harrow

FOR Canadian power-harrow work this combination can't be improved upon: The famous E-B 12 20, S.A.E. Rating, Model AA. Dependability, backed by 67 years of E-B implement manufacture and 12 years of E-B tractor building. Powerful, economical 4-cylinder kerosene motor with 25% surplus power. 88 parts heat treated. Enclosed, dustproof gears. Hyatt Roller Bearings, K-W Magneto, etc. Woman or boy can handle it.



The E-B No. 60 Engine Disc Harrow is built in two sections with large weight pan between. 8 ft. for 12-20 and 10 ft. for larger power units. Extra heavy discs, flanges, axles, etc. Equal to heaviest engine work. Front discs throw out, rear discs throw in, assuring thorough pulverization. Ask your E B dealer about this power-harrow combination.

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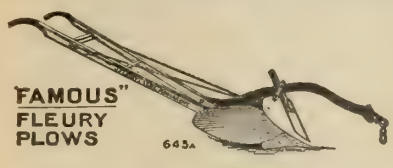
FOR YEARS TO COME



The world's demand for food must be met. It is to Canada and to the United States that the people of war-stricken Europe are looking for supplies.

This is the guarantee of prosperity. Shall we live up to our opportunities and our responsibilities?

USE THE **FAMOUS FLEURY**
CULTIVATING IMPLEMENTS and STOCK RAISERS' MACHINES

Plows, Harrows, Scufflers, Turnip Drills, Wheel Barrows, Straw and Ensilage Cutters, Root Cutters, Saw Machines, Roller Grain Crushers, "Rapid Easy" Plate Grinders.

ENJOY SATISFACTION and WIN SUCCESS.
We are pleased at all times to receive Farmers' letters of enquiry.

J. FLEURY'S SONS, Aurora, Ontario, Can.

For Spring Buying Note Carefully Our Buyers Directory on Page 63

days as a senior two-year-old. The latter was a world's record for a heifer with first calf. In the yearly semi-official Record of Performance test Posch Queen Wayne made 1,121.25 pounds butter and 25,085 pounds milk, while Calamity Snow Mechthilde 2nd made 1,053.75 pounds butter and 23,274 pounds milk as a three-year-old. The former is Holstein champion of Canada in the mature class, and the latter is Canadian champion for all breeds in the three-year-old class.

At the National Sale of Holstein-Friesians held at Milwaukee last June a new world's record price for animals of the cattle kind was established when the six-months-old gull calf, Carnation King Sylvia, consigned by Mr. A. C. Hardy, Brockville, Ont., brought the extraordinary price of $106,000. This young bull went to head the herds of the great Carnation Milk Company in Wisconsin and Washington, totalling in all some 600 head of cattle. While this calf was in the sale ring eighteen cows were offered by breeders to be bred to him at a service fee of $1,000 each. The publicity given to the sale of Mr. Hardy's calf was probably greater than any other transaction of a similar kind ever received, and had a wonderful effect in creating a conviction in the public mind that Canadian breeders are able to furnish Holsteins equal to any in the world. At the same sale the world's champion junior two-year-old butter producer, Het Loo Pietertje, consigned by Mr. W. L. Shaw, Newmarket, Ont., brought $12,750, the second highest price for a female. There was some difficulty about settlement for the cow which sold for a higher price, and she was later put up again and resold for $10,000, so that Mr. Shaw's heifer was actually the top female of the sale.

Still Winning the Dairy Tests

Holsteins were again the big winners in the dairy tests of 1918. No winter fairs were held at Ottawa or Amherst on account of the fair buildings being occupied by the military authorities. At the Ontario Provincial Winter Fair at Guelph Holsteins stood highest in every section, Mr. George Smith, Port Perry, winning the grand championship with his cow, Fayne Segis Pontiac, with the good record of 266.7 pounds milk in three days, testing 3.6 per cent. fat, scoring a total of 317.635 points, a score which closely approaches the performance of Messrs. Dickie's cow, Miss La Honda, at Amherst in 1914. Miss La Honda's score of 332.57 points is, I believe, the highest ever made in show ground test.

The great majority of the dairy tests held at the fall fairs throughout Canada again went to the credit of the Black-and-Whites. At Calgary, Lloydminster, Charlottetown, Quebec, Brandon, Ste. Scholastique, Picton, Stratford and Cornwall fairs Holsteins took first place, and probably at others from which we have had no report.

WHEN THE STOCK BREEDER SUCCEEDS

Continued from page 12

stock may use it to equally good purpose and according as he advertises he must increase the price in order to make it pay. It is policy to be prompt, courteous and direct in answering correspondence as it does to treat the other fellow as you yourself would wish to be treated. It is wise to study human nature that you may be able to close bargains at the psychological moment. It always pays to be honest, straightforward and above board. "Putting it over on the buyer" is bad practice and means ultimate loss not only of money but of character. Culls should never be sold for breeding purposes. They are a poor advertisement for any herd or flock and do damage. In selling by letter, it is safe practice to underestimate the strong points rather than to overpraise them. Give the buyer a pleasant surprise when he gets his purchase. He will come again. *Honesty is the Best policy in all things. Breed the Best and Feed the Best. House for health. Advertise. Be Honest with yourself and the buyer.*

NEAR-PACIFIC FARM ITEMS

CLINTON TUCKER

VANCOUVER municipal authorities are attempting to anchor the retail milk price at 15 cents. Principal distributors established six quarts for a dollar, or 16 2/3 cents a quart, early in December, the highest milk price ever known at the Coast. The producers of a Vancouver dairy, known as the Fraser Valley, are selling at 15 cents, and several other distributors have been brought into line. The Fraser Valley Milk Producers' association, which completely dominates the Vancouver milk market through a wholesale organization which sells practically the entire Fraser Valley milk output, has in view the establishment of a big retail business in Vancouver.

The evaporator at Vernon, Okanagan Valley, has purchased this fall 3,000 tons of local potatoes at $22 a ton. It thus has distributed some $66,000 to vegetable growers. It has disbursed many more thousands in wages. An evaporator at Armstrong, a few miles north, has operated on an equal scale. These by-product businesses all enter into the agricultural progress of B. C. They are especially desirable in the vegetable industry. British Columbia's vegetable soils are extensive and unsurpassed, yet vegetable production will always be relatively small until large nearby markets exist. Potatoes are so bulky, Western freight rates so high, that only under exceptional market conditions can British Columbia with any profit export beyond a certain radius. Her main markets at present are local, evaporator, and prairie. It would be possible to develop a large business in seed stock, but this trade is at present small.

What will be the immediate future of the evaporator business in British Columbia? The industry has been managed on essentially a war basis, with wide margins of profit which automatically would remove much concern about equipment investment. The business has had mushroom growth in the United States, where clever promoters have induced many country communities to build local plants. With army contracts at an end, what will Canadian and United States evaporators do? It would be strange, indeed, if there was not at least a temporary depression in the industry.

Undoubtedly the vegetable evaporating business has a great future, but with demand from the home population largely undeveloped the industry can very easily now be overdone. One Pacific Coast concern has advertised packaged evaporated vegetables extensively in the Western states, making a determined effort to popularize them. Before the great war broke out, a British Columbia concern, catering mainly to the Far-North, had worked up a soup mixture demand. However, the domestic trade remains very largely to be developed, both in Canada and the United States, yet never before were there so many factories equipped to supply it.

Last winter among British Columbia evaporators there was nearly stagnation when British contracts failed to materialize. Along in the spring, the United States entered the market, placed contracts liberally, and plants were busy way up into the summer, considerable quantities of potatoes being imported.

The Okanagan Valley 1918 production is estimated at $4,000,000 for fruit and vegetables. The crop both in size and prices broke all precedents. Throughout this part of Southern British Columbia there is sound prosperity and optimism at present.

At Kelowna, where cannery tomatoes are an important crop, a Japanese syndicate recently bought a tract of first-class land which it plowed with a small caterpillar style tractor. It will raise tomatoes. The Japanese are anything if not enterprising. In the Fraser

Valley they are becoming an important element in the small fruit industry.

The 1918 B. C. honey crop is just about cleaned up. For months the province will use imported honey in the main, much of it inferior to the local article. Producers got around 30 cents a pound for extracted. Honey production is mainly sideline work in this province, an industry of small, often inefficiently managed, apiaries. For those with it in them to learn how, beekeeping pays exceptionally well in British Columbia.

HOW HOLSTEINS BUILD FORFORTUNES

Continued from page 13

amount of pasturing all summer. I have tried sowing a mixture of oats and sweet clover on a field in very good heart and have pastured it just before oats were beginning to head out. The cows milked splendidly on it, but I am satisfied the sweet clover that fall gave the most feed.

Silos and Sweet Clover

We aim to have our silo 15 ft. x 35 ft. full and re-filled at least once, and then one is assured of a bountiful supply of succulent feed for the long winter months. Our farm is clean and all the grain is sold for seed purposes. Oats are the only grain we buy and to make a balanced ration, we mix oat chop 5 lbs., bran 3 lbs., and cotton seed meal 2 lbs. The cotton seed is high in protein and fed in moderation will greatly increase the milk flow. We mix the ensilage in the morning for the following night and morning with about ½ more cut-straw than ensilage, using some meal and salt to make it more tasty. Extra meal is fed in proportion to milk given. Whole straw is given after cleaning up this mixture in the morning, and hay is fed at night. We feed but twice per day, alfalfa is very desirable when it can be secured, but good clover of any kind is also very satisfactory. Water at all times is quite essential to the dairyman; in our stables we have water running by gravity from a spring, and it is always moderately warm.

Milk Returns Good

Our milk returns for 1918 were very satisfactory and notwithstanding the high cost of feed, labor, etc., a neat net profit was realized.

From 30 cows during 1918 we shipped 2,275 cans, which at 80 lbs. per can (it amounts to about 80 lbs. as the dairy claims an old can will not hold 82½ lbs. or 8 gals.) is 182,000 lbs. This is an average of 6,066 lbs. per cow, we received from the dairy an aggregate of $5,355.81, an average of $178.52. A more itemized account cannot be given as during the flush season we are obliged to ship at churning price, and also in the heat of summer some milk may sour, and this is made into butter, the shipper being paid accordingly Dairy farming requires constant attention but a young farmer has in it a sure road to independence.

INCUBATION PERIODS

THE following table shows the time required by different fowls for the incubation of eggs laid by them:—

Guinea hen	25	days
Partridge	24	"
Pheasant	25	"
Guinea hen	25	"
Ducks	28	"
Pea hen	28	"
Turkey	28	"
Goose	30	"

MINNESOTA'S HOG COSTS

THE following were the costs of feeding hogs:

564 lbs. feed of 2½ cents per lb.	$14.10
6.2 man hours of labor at 20 cts.	1.24
.9 horse hours of labor at 14 cts.	.13
Cash expenses	.11
General expenses	.19
Interest charge	.66
Total cost per 100 lbs. live wgt.	$16.43

With hogs selling at 17 cents net to the farmer, there apparently is not so very much clear profit in feeding pigs even at the present high price for bacon hogs.

At Cobourg Ont. Sept. 17-20, 1918

"There's a size to suit your farm"

"HEIDER" Tractors

2 SIZES { Model D 9-16 H.P.---2 Plows
Model C 12-20 H.P.---3 Plows

The "Heider" is NOT an experimental machine. NINE YEARS of steady repeat-order sales record attests "Heider" satisfaction on **thousands** of farms throughout this continent and abroad.

The "Heider" is the standard ONE-MAN outfit. Users with wide tractor experience accord it the lowest upkeep cost of any tractor they've used.

Simple in Construction---Easy to Handle Abundant Power---Burns Coal Oil or Gasoline

SEVERAL HUNDRED "HEIDERS" IN USE IN CANADA

Here's What Owners Say---

December 18, 1918.
BELIEVES FRICTION DRIVE IS THE BEST
Anyone wanting a Tractor and Separator can make no mistake in buying this combination.
(Sgd.) PETER L. MUSSELMAN, St. Jacobs.

Zurich, Ont., Nov. 27, 1918.
Gentlemen:—
I am busy every day and the farmers around here think there is nothing like the 12-20 Heider. I don't have to do any talking, the Heider does all the talking herself. You will have a good many Heider sales in this section.
(Sgd.) P. L. KROPF.

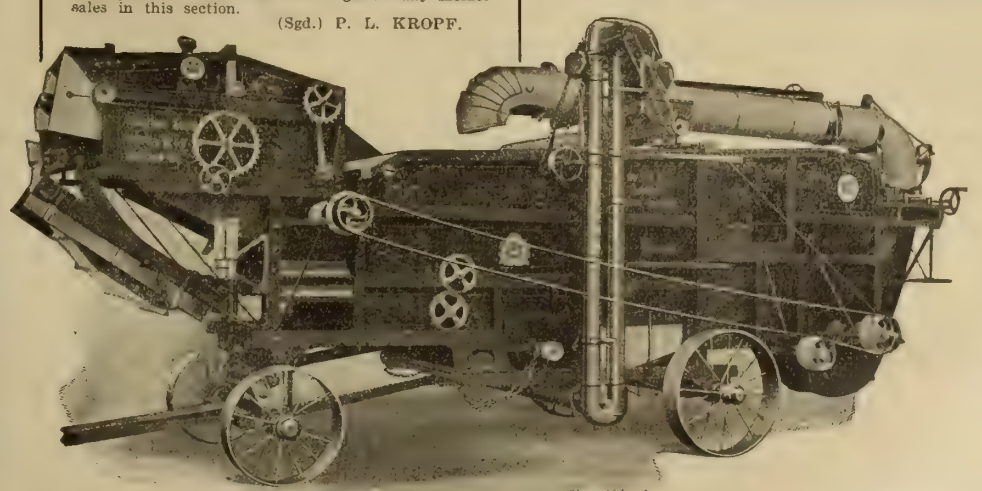
Heider Power

always fits the load. It takes hold with a steady, irresistible pull that never jerks your machinery. Power that makes plows dig deep and turn over the toughest sun-baked soil hour after hour. Power that can be throttled down to a mere creeping gait.

Canadian farmers, both east and west, have shown their appreciation of these time-tested and PROVEN Heider models. They are built and sold by a Canadian company enjoying 60 years' reputation for high grade farm machinery.

Design—Four-wheel construction, four-cylinder, heavy duty Waukesha motor. "Heiders" are friction driven, the biggest feature ever built into a tractor. Steady, flexible power, no straining and jerking—no power lost in turning needless gears, no gears to strip.

Easy and perfect control—easier than an automobile—one lever starts, stops or reverses.



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The Waterloo Manufacturing Co., Limited

Western Headquarters: PORTAGE LA PRAIRIE, MAN.

200-250 MAIN ST.

Branch Warerooms: REGINA and SASKATOON

Waterloo, Ont.

Make Manure Go Twice as Far by Adding Fertilizers

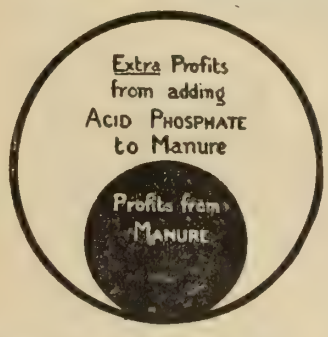
Everybody knows that manure is valuable, but its value can be greatly increased by the addition of Fertilizers, as shown by experiments of the Dominion Experimental Farms.

Field Tests of Dominion Experimental Farm

Crop	YIELD from Manure 30 T. per A.	Yield from 15 T. Manure plus Fertilizers	Gain for ½ Manure + Fertilizers, over Manure alone.
		(Yield)	
Turnips	1298 bu.	1414 bu.	**124 bu.**
Carrots	528 bu.	598 "	**69 bu.**
Onions	14½ T.	19 T.	**4½ T. 50 bu.**
Tomatoes	16 T. 610 lbs.	18 T. 649 lbs.	**2 T. 26 lbs.**
Potatoes	131 bu.	200 bu.	**69 bu.**

Analysis of Manure shows that for grain and vegetable crops, manure is weak in Phosphoric Acid.

THREE leading Experiment Stations show how this weakness of manure can be corrected to great farm profit:—



Addition of Acid Phosphate to Manure at a cost of $4.60 made gain of $17. 43 over manure untreated. —Average of Ohio, Pennsylvania and Indiana Experiment Stations.

Ohio Experiment Station

Covering a period of 13 years the average increased production from soil treated with stall manure and acid phosphate over yard manure was:— Corn 15.27 bus.: Wheat 6.18.: Hay 1840 lbs.

Pennsylvania Experiment Station

By the addition of acid phosphate to manure at a cost of $5.95, the gain over untreated manure was $23.74.

Indiana Experiment Station

The addition of 200 lbs. of acid phosphate to a six ton application of manure per acre per rotation of corn, wheat, and clover has produced additional crop increases valued at $14.98 and $21.44 respectively.

Similar increases in crop yields on *your* farm can be made by supplementing manure with Fertilizers.

Study the Facts—It Pays to Fertilize

Write for Free Bulletins on Crop Production

The Soil and Crop Improvement Bureau

of the Canadian Fertilizer Association

1111B Temple Building · Toronto

23

SYDNEY BASIC SLAG

Fertilizes Your Land Economically and Effectively

If you know the Goods place your order with our local agent right away. On the other hand if you have never used Sydney Basic Slag, write for our pamphlet, giving all information.

Agents wanted where not already represented

WRITE IMMEDIATELY

The Cross Fertilizer Co., Limited

SYDNEY, NOVA SCOTIA

Soil Needs for Various Crops

By H. G. BELL, B.S.A.

FARM crops have definite requirements and Canadian soils have just as definite characteristics. How to meet the special demands of the former and to make up for the characteristic weaknesses of the latter is the essence of the business of good crop production. The following table will aid in making our meaning clear:

FARM CROP REQUIREMENTS

Crop	(Available) Plantfood Nitrogen (Ammonia)	Phosphoric Acid	Potash
Potatoes, Mangels, Carrots, Sugar Beets	Small Supply	Abundance	Small Supply
Turnips	Fair Supply	Abundance	Small Supply
Wheat, Oats, Rye, Barley	Small Supply	Abundance	Small Supply
Corn (Husking)	Good Supply	Medium	Abundance
Corn (Silage)	Good Supply	Medium	Small Supply
Meadows, pastures and fodder crops	Fair Supply	Abundance	Small Supply

Canadian seasons, speaking generally, are relatively short. For this reason, for all crops that are at all in danger of reaching the end of the growing season in an immature state, benefit results from the balancing of the plantfood, especially with the plantfood that hastens maturity; this is phosphoric acid. An early start for grain, corn, and other crops, is obtained by valuable nitrogen, the kind of plantfood that gives early and vigorous growth to the small plants. For root crops, especially where a large amount of starch is deposited in the finished product, potash is desirable.. In fact, potash gives to all crops strength of cell-structure that aids them in resisting plant diseases. For grain crops the average fertilizer application is 250 to 300 pounds per acre applied at the time the grain is sown. The best application is obtained where the fertilizer is dropped with the grain drill attachment which deposits it in the damp soil near the tiny roots of the crops it is intended to help.

Crop growers and livestock men, when they think of it, realize that the same truth applies to the production of both great classes of farm produce, namely, that both the young plant and animal must be fed an abundance of readily available and well-balanced food if it is to make a satisfactory start in life.

Various soils have various supplies of the essential plantfoods, some extremely low and some medium in quantity, but successful crop feeding is becoming more and more a question of studying the crop requirements than one of analyzing the storehouse of the soil.

Soil deficiencies cannot be determined by chemical analysis alone, because of numerous overlappings of soil types and the fact that chemical analysis does not reveal the availability of the nitrogen, phosphoric acid and potash of the soil. Study your soils and the characteristic needs of your crops. Add plantfood which as nearly meets the conditions as possible. Study the results and vary subsequent additions of plantfood to correct the deficiencies which you observe.

Manure is primarily valuable for the plantfood which it carries. If protected from rain and stored where the liquid manure can be taken up with straw or other bedding, it carries to the ton 10 to 15 pounds of nitrogen, 5 to 8 pounds phosphoric acid and 10 to 12 pounds potash. If left exposed where rain and snow can wash out the soluble plantfood, over half of these valuable constituents are lost.

Manure is strong in nitrogen and potash as compared to phosphoric acid, in which it is weak. Various experiment stations recommend the addition of 50 pounds of acid phosphate to every ton of manure for grain crops.

As to definite recommendations what to use under varying conditions we present the following table which is based upon the results of experimental tests and observations of the results obtained under actual farm practice.

Composition, Amount and Value of Manure Produced by Different Farm Animals

	Analysis and Value Per Ton of Manure					Amount and Value per 1,000 Lbs. Live Weight Per Day		
	Water	Nitrogen	Phosphoric Acid	Potash	Value Per ton	Pounds Per Day	Value Per Day	Value Per Year
	%	%	%	%			Cents	
Sheep	59.52	.77	9.39	.59	$3.30	34.1	7.2	$26.09
Calves	77.73	.50	.17	.53	2.18	67.8	6.7	24.45
Pigs	74.13	.84	.39	.32	3.29	83.6	16.7	60.88
Cows	75.25	.43	.29	.44	2.02	74.1	8.0	29.27
Horses	48.69	.49	.26	.48	2.21	48.8	7.6	27.74

Calculations made are based on normal prices, i.e., nitrogen, 15 cents; phosphoric acid, 6 cents; potash, 4½ cents, per pound each.

Grass and Clover Seeds

IN the purchase of clover and grass seed the following qualities should be looked for:—

1. Freedom from weed seeds, especially those weeds covered by the Seed Control Act. The weed seeds can be properly seen only by spreading out the sample of clover or grass seed on a clean white sheet of paper and looking carefully over it with the aid of a tripod magnifier or hand lens. No farmer should be without a lens of some kind. Everyone who has to purchase seed should endeavor to become familiar with the common weed seeds and know the standards of purity required by the Seed Control Act for the various grades of clover and grass seed.

2. Freedom from dirt, grit, broken straw and other inert matter. A great any samples of clover and grass contain far too large a percentage of such inert matter. Those buying such seed are paying a high price per pound for dirt.

3. Good size and color. A good sample of seed of any kind should be large, plump, bright, and have the characteristic color well developed. Plumpness, brightness and good color are usually indicative of high germinative capacity.

4. High germinative capacity. Good clover or grass seed of any kind should have a high germinative capacity. This cannot be accurately judged by an examination of the seed and can be ascertained only by a germination test. Purchasers of seed can have such tests made for them by sending their seed to the office of the Seed Commissioner, Department of Agriculture, Ottawa.

Ontario Farmers are reminded that the Department of Botany, of the Ontario Agricultural College is at their service at all times for the testing of seed as to purity. In submitting samples for purity test send at least one pound of the coarser grains, one ounce of alfalfa or red clover, and half an ounce of alsike or timothy. A full report on samples will be furnished. Samples of seed should be carefully packed and addressed with postage prepaid to the Botanical Department, Ontario Agricultural College, Guelph.

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TRADE MARK REG.

The New Friend

Overland cars have the reputation of making close friends. In fact, Overland cars are conspicuous everywhere there are up-to-date farms with modern equipment. What stronger recommendation could be asked for, than the fact that thousands of owners vouch for the complete satisfaction of Overland Model 90 cars. The steadily growing public appreciation of Overland is evidenced in the demand of this season. See the Willys-Overland dealer now.

WILLYS-OVERLAND LIMITED

Willys-Knight and Overland Motor Cars and Light Commercial Wagons

Head Office and Works, West Toronto, Ontario

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Model Ninety *Five Passenger Touring Car*

These Seven Cows

Kept 1 Year on the Product of 1 Acre

Keeping seven cows for a whole year on the product of one acre goes a long way towards reducing the cost of milk. On one acre of land in the State of Michigan, **Ross' Eureka Ensilage Corn** produced, in one year, 70 tons and 800 lbs. of the best quality of sweet ensilage. At 50 lbs. per day, this would feed seven cows for one year with enough left over for 261 feeds.

ROSS' EUREKA CORN grows the tallest, has the most leaves, is very short jointed and will produce more tons of good, sweet ensilage per acre, than any other variety. If you plant cheap corn you will reap accordingly. We have been selling Eureka corn for nearly 40 years and we know before shipping that it will grow under favorable conditions. This corn usually germinates 90 per cent. or better.

Ross' Eureka Corn

Waterford, Pa., R. F. D. No. 4
November 12, 1918.
Dear Sirs:—In regard to Eureka Corn, will say that I had a splendid stand of corn, don't believe I ever had any better. I have always found your seed corn to be first-class and will want more in the spring. J. C. BONNELL.

Goshen, Ind., R. R. No. 1
November 9, 1918.
Dear Sirs:—In regard to the Eureka Seed Corn, will say I had the best of luck with what I received, think fully 95% grew. Send price list next year as will want seed next spring.
WALLACE BUTTS.

ROSS EUREKA CORN is only one of our specialties. Complete line of Farm Seeds: Oats, Rye, Barley, Wheat, Buckwheat, Cow Peas, Vetch, Soy Beans, Essex Rape, and all varieties of Field and Ensilage Corn; Grass Seeds, including all kinds of Alfalfa and Sudan Grass. Also full line of Agricultural Implements, Poultry Supplies, Fertilizers, etc. Our 120-page catalog will be mailed free on request.

ROSS BROTHERS COMPANY, Front Street, Worcester, Mass.

LIVE STOCK COMMISSION DEPARTMENT

United Farmers' Co-Operative Co., Limited

We wish to announce that our office at the Union Stock Yards, West Toronto, will be open February 15th. This department will make a specialty of the handling of co-operative shipments of live stock. The department has been organized specially for the purpose of getting better returns for the producers in the disposition of their live stock.

An open competitive market is recognized as the best possible means of getting satisfactory results in the selling of any commodity and we are in a position to give this service whether you have a very few or a great many head of live stock to dispose of.

Our shipping instructions and circulars containing details are very complete and will be forwarded on request.

Having secured the services of expert operators in this line we can assure you of the best possible service in this line.

UNITED FARMERS' CO-OPERATIVE CO., Limited
LIVE STOCK COMMISSION DEPARTMENT

Milling skill, special machinery plus all the old time care gives PURITY FLOUR
(Government Standard)
the same superiority enjoyed in the old days.

"More Bread and Better Bread and Better Pastry."

PURITY OATS makes better porridge.

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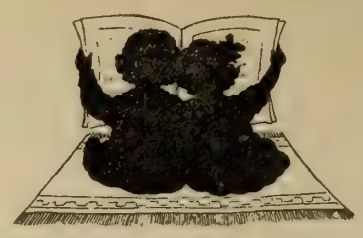
WESTERN CANADA HEAD OFFICE

Baby Ailments and Their Care

By ANNA STEESE RICHARDSON



GUARD your baby from illness by intelligent care. Never expose him to contagious diseases, like whooping-cough, scarlet fever, measles and mumps. Thousands of children now attain adult age without having these dreaded ailments. Especially do not underestimate the danger of whooping-cough. It is alarmingly fatal to infants.

Colic

Distension of the stomach or bowels by gas.

Symptoms.—A strong, sudden, hard cry, repeated at intervals of a few minutes; contraction of facial muscles, tense and hard abdomen. Usually complicated by constipation.

Treatment.—Warm the feet at fire, or with hot-water bag, wrapped in flannel; lay heated cloth on abdomen, or let the baby lie on stomach with a hot-water bag under him. If the gas is on the stomach, dissolve a soda-mint in half a tablespoonful of hot water and give with teaspoon. If gas is on bowels give a warm-water or soap-suds enema, at the same time rubbing abdomen with warm hand. Never give soothing syrup.

Prickly Heat

Fine red pimples which spread rapidly, usually caused by irritation from flannel clothing and excessive perspiring.

Treatment.—Lessen the weight of clothing; use soft muslin or linen against skin; sponge skin with equal parts of warm water and vinegar; dust affected parts with a powder made from two parts finely pulverized laundry starch and one part boric acid.

Chafing

Reddening or inflammation of the outer skin on parts of the body where the flesh creases, which frequently cracks and is easily infected.

Treatment.—Use no soap, but give bran or soda bath. For a bran bath, put a large handful of bran in a cheese-cloth and squeeze in the water till it turns milky. For a soda bath, dissolve two tablespoons baking-soda in a gallon of bath water. In very severe cases, all bathing should be omitted and the affected parts cleansed with sweet-oil and absorbent cotton and the skin completely covered with a dusting powder of starch and boric acid described above. The diapers must be changed immediately after they are even slightly wet or soiled, the parts well cleansed, dried, and powdered.

Constipation

Usually results from improper diet. Stools are hard and crumby and often streaked with mucous or phlegm, filled with curds.

Treatment.—The nursing mother should eat more coarse cereals, fresh and stewed fruits, vegetables, and coarse bread. The bottle-fed baby may need richer food; consult your doctor about strengthening the formula. If the constipation is chronic, it can be relieved only through diet and training to the habit of a regular bowel movement of a certain hour. To stimulate the action of the lower bowels and to establish the habit, use gluten suppositories for a few mornings. Then order the infant size. They do not irritate the mucous membrance. They should be inserted about two hours before the time you wish to establish the baby in the habit of a bowel movement.

Children of six months or more who suffer from constipation should drink water, also strained sweet orange juice, midway between feedings. When they reach the age to eat cereals and bread, serve only coarse cereals and bread or gems made of whole wheat, graham, and bran flour.

Diarrhoea

A poison in the intestinal tract, one of the most dangerous ailments of childhood.

Symptoms.—Bowels loose and watery, often green in color, with bits of undigested food, five movements or more in twenty-four hours. Baby turns pale and languid, face looks pinched, legs drawn up in pain.

Treatment.—Stop all food and send immediately for your physician. If you can not secure the services of a physician within a few hours, give castor-oil in the following doses:

Up to three months, one-half teaspoonful.

From three to six months, one teaspoonful.

From six to nine months, one and one-half teaspoonfuls.

From nine to twelve months, two teaspoonfuls.

From twelve months on, one to two tablespoonfuls.

Never give your baby soothing syrup for diarrhoea. If your baby has recurrent attacks of diarrhoea, investigate the source of milk supply. Unclean milk is the commonest cause of diarrhoea.

Colds

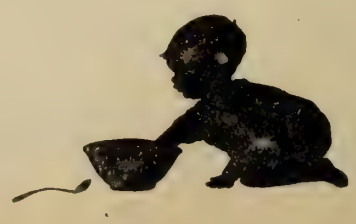
For cold in the head, give castor-oil in doses described for diarrhoea and drop liquid albolene into the nostrils with a medicine-dropper. If your baby has recurrent attacks of cold, ascertain the cause and remove it. This may be overdressing, an unventilated room, sleeping in a draft, or contact with adults who are suffering from catarrh, cold, etc. If his throat is sore or if he has a sharp, dry cough with wheezing or purring in the chest, send for a physician at once. Until he arrives keep the baby in bed in a room warmed with moist, not dry, heat, well ventilated. Apply to the chest a mustard plaster made as described below.

Croup

A spasmodic contraction of the air passages in the throat which usually occurs at night.

Symptoms.—Sharp barking cough, heavy breathing, gasping for breath.

Treatment.—Fold a soft piece of cloth into six thicknesses, dip into water 60 degrees Fahrenheit, wring dry and place around the baby's neck. Cover with dry cloth or piece of oiled silk to protect nightdress and covers. Change this cloth every half hour. Meantime, if the attack does not yield to the cold water treatment, set up your croup-kettle. Fill a teakettle with water and set on a gas or alcohol stove near the crib. Cover kettle and crib with a sheet. The steam confined by the sheet will relieve the contracted tubes. Be careful not to set fire to the bedding or scald the baby with hot water. If croup accompanies indigestion, give one or two teaspoonfuls of syrup of ipecac to cause vomiting, which will relieve both the croup and the indigestion.



Convulsions

Spasms or contractions which often precede acute illness like pneumonia or scarlet fever, or indicate serious digestive disturbance.

Symptoms.—Body becomes rigid, hands

clenched, face pale, eyes roll up and are fixed, muscles twitch, lips are bluish, forehead moist and chill.

Treatment.—Send for a doctor. Meantime keep the child very quiet and apply ice-bag or cloths dipped in ice water to the head. Put the feet in a mustard bath made from two heaping tablespoonfuls of mustard to one quart of water. If some one can slip off the clothing without disturbing the baby, wrap his entire body in towels dipped in the mustard water. Have plenty of water heated and a bath-tub at hand for the use of the doctor. If the physician is delayed and the convulsions continue until the pulse is weak, the face very pale, nails and lips blue, feet and hands cold, give a hot bath to bring the blood to the surface and relieve the heart, lungs and brain. Use the mustard bath described below.

Whooping Cough

Paroxysms of coughing which end with a whoop, frequently followed by vomiting.

Symptoms.—Coughing which gains in severity, especially at night; face red, eyes watery during the paroxysm, followed by vomiting. Usually develops from one to two weeks after the child is exposed.

Treatment.—Care in diet, plenty of fresh air. Give no cough syrups or proprietary medicines. If anything can be done to lessen the severity of the attacks and prevent complications, your physician will do it.

Measles

Symptoms.—Cough, sneezing, watery eyes and nose, like a severe cold in the head, slight rise in temperature. After three or four days small red spots appear on the face and spread slowly over the body. In babies there is danger of bronchitis and pneumonia as a complication.

Treatment.—Give the baby a warm bath and keep him in bed in a well ventilated room. Protect the eyes from bright light and bathe them three or four times daily with warm boric acid solution. Weaken the food for a bottle-fed baby. Children who are eating solid food should be placed on a liquid diet. To avoid pneumonia, keep the baby in bed at least three days after the temperature drops to normal and always have a physician see the baby to guard against complications.

Books on Home Economics

This list is recommended for circulating home libraries

Foods, Cooking, Housekeeping

Boston Cooking School. By Fannie M. Farmer; McClelland & Stewart, Toronto. Price $2.00.

Wheatless and Meatless Days. By Partridge and Conklin; Messrs. D. Appleton & Co., New York. Price $1.25.

Food and Cookery for the Sick and Convalescent. By Fannie M. Farmer; Little, Brown & Co., Boston, or McClelland & Stewart, Toronto. Price $2.00.

Foods and Dietetics. By Hutchinson; Macmillan Co. Price $3.50.

Canning, Preserving and Jelly Making. By Janet M. Hill; Messrs. Little, Brown & Co., Boston. Price $1.00.

The New Housekeeping Efficiency. By Christine Frederick; Doubleday, Page Co., New York. Price 85c.

Studies in Home Management. Musson Book Co., Toronto.

The Healthful Farmhouse. By Helen Dodd; Whitcomb & Barrows, Boston. Price 60c.

The Complete Housekeeper. By Emily Christine Frederick; Doubleday Page Holt; Musson Book Co., Toronto.

Home Building and Decoration

Interior Decoration. By Wm. P. Vollmer; McBride, Nast & Co., New York. Price $1.25.

Planning and Furnishing the Home. By Mark J. Quinn; Harper & Bros., New York.

Principles of Interior Decoration. By Frank Parsons; Eaton's. Price $3.50.

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KILIMA WALTZ and **HAWAIIAN HOTEL,** by Palie K. Lua and David K. Kaili. *A1874, 10-inch, 90c.*

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The bride tasted it and was delighted. "Oh, if I could only make bread like that!" she exclaimed.

"Certainly you can," said her neighbour, "Cream of the West is a dandy flour for bread. I ought to know for I have used it for years, I'm sure you'll be just as satisfied as I am with it. Try it, my dear."

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Craftsman Houses. By Gustav Stickley; Craftsman Pub. Co., 41 W. 34th St., New York.
The Furnishing of a Modest Home. By F. H. Daniels; The Davis Press, Worcester, Mass. Price $1.10.

Child Welfare — Health — Nursing — Sanitation

Mothercraft. By Sarah Comstock; Hearst's International Co., New York, McAinsh's Book Store, Cor. College and Yonge. Price $1.00.
The Care and Feeding of Children. By Dr. L. Emmet Holt; McClelland & Stewart, Toronto.
We and Our Children. By Dr. Woods Hutchinson.
Home Nurse's Handbook of Practical Nursing. By Charlotte W. Aikens; J. F. Hartz Co., Toronto. Price $1.50.
Emergencies. By Charlotte V. Gulick; Messrs. Ginn & Co., New York. Price 48c.
Rural Hygiene. By Henry N. Ogden; Macmillan Co., Toronto. Price $1.50.
School Sanitation and Decoration. By Burrage & Bailey; Messrs. L. C. Heath & Co., Boston. Price $1.60.
The Prevention of Disease. By Kenelm Winslow, M.D.; J. F. Hartz Co., Toronto. Price $1.75.
What a Young Woman Ought to Know. By Dr. Mary Wood Allen; Vir. Pub. Co., 450 Church St., Toronto. Price $1.00.

Social and Economics—Home Ethics

Farm Boys and Girls. By Wm. A. McKeever; Macmillan Pub. Co. Price $1.50.
A Mother's Ideals. By Andrae Hofer Proudfoot; A. F. Laugan Co., (T. Eaton). Price $1.10.
The Brown Mouse. By Herbert Quick; Bobbs-Merrill Co., Indianapolis. Price $1.50.
The Century of the Child. By Ellen Key; G. Putnam's Sons, New York. Price $1.50.
Woman and Labor. By Olive Schreiner; Frederick A. Stokes, New York. Price $1.50.
Adventures in Contentment. By David Grayson; Musson Book Co., Toronto. Price $1.35.
Mother. By Kathleen Norris; Doubleday, Page & Co. Price $1.00.
In Times Like These. By Nellie McClung; McLeod & Allen, Toronto. Price $1.00.
The New Era In Canada. By Several Authors; J. M. Dent & Sons, Toronto. Price $1.50.
The Dawn of a New Patriotism. Hunt; Macmillan Co., Toronto. Price $1.00.
Song of Life. By Dr. Margaret Morley.
Song of Life and Love. By Margaret Morley.
Home Games and Evening Entertainments. By F. A. Thornwood, M.A.; Musson Book Co., Toronto. Price $1.00.
Etiquette. By Agnes H. Morton; Penn. Pub. Co., Philadelphia. Price 35c.
Encyclopaedia of Etiquette. By Emily Holt; Musson Book Co., Toronto. Price $1.80.
What Men Live By. By Richard Cabot, M.D.; McClelland & Stewart, Toronto.
Everyday Living. By Anne Payson Call; Little, Brown & Co., (T. Eaton). Price $1.25.
Women of the War. By Hon. Mrs. Francis Maclaren; Musson Book Co., Toronto. Price 87c.

Additional Fiction and Poetry

Canadian Poets. By Garvin; McClelland & Stewart. Price $3.00.
Riley's Farm Rhymes. By J. W. Riley; Grosset & Dunlop, New York. Price 60c.
Riley's Child Rhymes. By J. W. Riley; Grosset & Dunlop, New York. Price 60c.
Riley's Love Lyrics. By J. W. Riley; Grosset & Dunlop, New York. Price 60c.
Pictures Every Child Should Know. By Dolores Bacon; Doubleday, Page & Co.
Sons Every Child Should Know. By Dolores Bacon; Doubleday, Page & Co.
Myths Every Child Should Know. By Hamilton W. Mabie; Doubleday, Page & Co.
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Laddie. By Gene Stratton Porter; Grosset & Dunlop. Price $1.00.
The Soul of the War. By Philip Gibbs; McClelland & Stewart. Price $1.00.
Mr. Britling Sees it Through. By H. G. Wells.
Christine. By Alice Cholmondeley; Macmillan Co., Toronto. Price $1.25.

CANDY AS A FOOD

ONE of the extravagances which the food economist has always held before us is our wasteful tendency to spend a large share of our food money on sugar and sweet stuffs instead of upon plainer and supposedly more wholesome articles in the diet list. In reality however, roughly speaking, a pound of sugar has about the same number of calories or heat units as a pound of wheat flour, a pound of fresh meat or a pound of rice, and within the limits of its ready digestibility—that is up to one-quarter of a pound a day—is more quickly absorbed and cleanly burned than any of them. And it is no mere whim or blind self indulgence which has sent up our sugar consumption from a few pounds to nearly eighty pounds per capita per annum, but a sound appreciation of a valuable food to increase our national horsepower.

Dr. Hutchison says: "It is interesting to note that the English give sugar to their blood horses in order to sustain them in their tests. To Swiss guides and Arctic explorers too, the value of such a saccharine food as chocolate has long been familiar. It was not until the year 1893, however, that Mosso first put the value of sugar as a muscle food to the test of experiment. He was able to show that sugar has a notable effect in lessening muscular fatigue, and that its effects are rapidly exerted. This is very clear when we remember that the starch we take in such foods as bread, potatoes, cereals, etc., must be changed to sugar by the digestive system before it can be assimilated or used for body fuel.

The child's craving for sugar is a natural appetite. Children can assimilate more sugar than adults because of their relatively active muscular energy and relatively large body surface for losing heat in proportion to their size. They do not as a rule care for fat meat and prefer sweets as a natural substitute. Good wholesome candy made from pure materials and free from injurious colorings and flavorings is one of the most useful as well as the most attractive forms in which sugar can be given. Most candies contain large quantities of cane sugar with frequently some fats such as butter, nuts and fruits, corn syrup, starch and chocolate. All of these elements are useful foods. The danger of candy injuring the teeth is overcome by proper cleaning of the teeth, a necessary safeguard under any condition.

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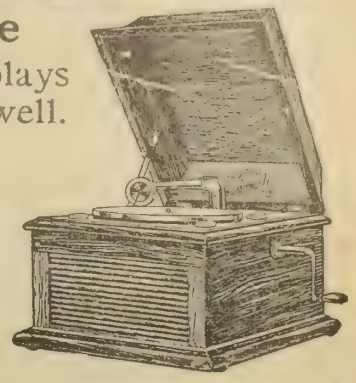

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MENUS FOR A WEEK IN WINTER

BREAKFAST

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Oatmeal, Rich Milk Bacon, Fried Potatoes Apple Sauce Brown Bread	Wheat Farina or Oatmeal, Rich Milk Bacon, Creamed Potatoes Canned Fruit Toast	Oatmeal, Rich Milk Boiled Eggs Hashed Brown Potatoes Stewed Prunes Bread and Butter	Cornmeal or Oatmeal Bacon, Warmed Potatoes Apple Sauce	Oatmeal Creamed Codfish Potato Cakes Jam, Bran Muffins	Wheat Farina, Boiled Rice or Oatmeal Bacon, Creamed Potatoes Graham Biscuits Coddled Apples	Cooked Cereal or Prepared Breakfast Food Eggs, Poached in Milk or Scrambled Baked Apples Brown Bread

DINNER

Braized Beef with Potatoes, Onions, Carrots Beet Salad Caramel Pudding with Jelly	Boiled Pork Parsnip Fritters Boiled Potatoes Celery or Pickled Beets Apple Pudding	Pot Roast of Beef Turnips Mashed Potatoes Pickled Beets Steamed Fruit Pudding	Boiled Dinner (Pickled Beef or Pork with carrots, cabbage, turnips, onions) Cabbage Salad Apple Pie	Fried Ham or Fish, Mashed Potatoes Carrots Pickled Sweet Apples Tapioca or Rice and Raisin Pudding	Beef Stew or Ham Boiled Potatoes Canned Corn, Beans, Peas, or Creamed Onions Baked Apples with Cream	Beef Roasted with Browned Potatoes Creamed Cauliflower, Cabbage or Onions Deep Apple Pie

SUPPER

Shepherd's Pie Scalloped Tomatoes Graham Gems Canned Fruit	Tomato Soup Cold Roast Beef Scalloped Potatoes Stuffed Baked Apples Brown Bread	Creamed Lima Beans Potato Cakes Beet Salad Tea Biscuits Floating Island	Liver and Bacon Warmed Potatoes Scalloped Onions Brown Bread Canned Raspberries	Split Pea Soup Macaroni and Cheese Scalloped Tomatoes Coddled Apples Plain Cake	Baked Beans Roast Potatoes Pickled Sweet Apples Tea Biscuits Canned Fruit	Scalloped Potatoes Cold Roast Beef Apple and Celery Salad or Beet Salad Stuffed Baked Apples with Cream Nut Bread or Plain Cake

MENUS FOR A WEEK IN SPRING

BREAKFAST

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Wheat Farina Boiled Eggs Marmalade Brown Bread	Oatmeal Scrambled Eggs Stewed Rhubarb Bran Biscuits	Coarse Cooked Cereal Bacon, Warmed Potatoes Stewed Prunes Bread	Oatmeal Boiled Eggs Stewed Rhubarb Toast	Wheat Farina Scrambled Eggs Baked Apples Muffins	Oatmeal Eggs Poached in Milk Marmalade Bran Gems	Coarse Cooked Cereal Scrambled Eggs Stewed Rhubarb Brown Bread

DINNER

Beef Stew Baked Potatoes Creamed Cabbage Apple Betty	Baked Ham Boiled Potatoes Asparagus Caramel Pudding with Jelly	Boiled Dinner—(Pickled Pork or Beef, with Vegetables) Beet Salad Custard Pie	Fried Ham Boiled Potatoes Creamed Onions Sweet Pickled Apples Tapioca Custard	Barley Soup Fish—Tomato Sauce Mashed Potatoes Raisin-Lemon Pie	Home Canned Fresh Beef Mashed Turnips Beet Salad Apple Pie	Roast Lamb Mashed Potatoes Creamed Asparagus Sweet Pickled Apples Floating Island or Lemon Sponge Pie

SUPPER

Cream of Onion Soup Boiled White Beans Potato Cakes Lettuce Floating Island or Baked Custard with Jelly	Scalloped Salmon Potato Puff Watercress Stewed Prunes and Raisins	Cheese Fondu Scalloped Tomatoes Lettuce Hot Tea Biscuits Maple Syrup	Asparagus on Toast Poached Eggs Stewed Rhubarb Plain Cake	Salmon Custard Baked Potatoes Watercress Maple Syrup—hot Tea Biscuits	Cream of Corn Soup Scalloped Potatoes Finnan Haddie Stewed Rhubarb Plain Cake	Baked Potato Egg and Lettuce Salad Nut Bread Maple Mousse

MENUS FOR A WEEK IN SUMMER

BREAKFAST

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Coarse Cooked Cereal Bacon Warmed Potatoes Fresh Berries in season or Fresh Apple Sauce or Jam	Oatmeal Scrambled Eggs Potato Cakes Fresh Berries Apple Sauce or Marmalade Bran Gems	Wheat Farina Creamed Codfish Hashed Browned Potatoes Fresh Berries, Apple Sauce or Marmalade	Oatmeal Bacon Warmed Potatoes Fresh Berries, Apple Sauce, Rhubarb, or Stewed Prunes	Wheat Farina Poached Eggs Potato Cakes Fresh Berries, Apple Sauce, Rhubarb or Canned Fruit.	Oatmeal Bacon or Eggs Creamed Potatoes Fresh Berries, Apple Sauce, Rhubarb or Jam	Wheat Farina or Some Coarse Cooked Cereal Fresh Fruit, Marmalade or Fruit Relish Toast

DINNER

Ham and Eggs Mashed Potatoes Spinach Lettuce Green Apple Pie	Home-canned fresh Beef New Potatoes Carrots Green Peas Raspberry Betty	Boiled Beef Mashed Potatoes Green Beans Cress Strawberries or Raspberries and Cream	Home-canned Beef Boiled Potatoes Beet Greens Green Onions Steamed Berry Pudding or Apple Dumpling	Roast Beef with Browned Potatoes Green Beans Lettuce Strawberries or Raspberries and Cream	Roast Lamb New Potatoes Green Peas Carrots Radishes Strawberry or Raspberry Shortcake	Stewed Chicken Spinach or Green Peas Creamed New Potatoes Lettuce, Radish, Cress Raspberry Pie

SUPPER

Cold Ham Hashed Browned Potatoes Water Cress Berries and Cream Brown Bread	Devilled Eggs Scalloped Potatoes Lettuce Salad Stewed Fruit Tea Biscuits	Creamed Potatoes Eggs and Lettuce Salad Cheese, Cress Berries and Cream Cookies	Creamed Lima Beans Fried Potatoes Lettuce Apple Sauce Spice Cake	Scalloped Salmon Potato Cakes Green Onions Radishes Berries and Cream	Beef Hash Warmed Potatoes Pickled Beets Apple Sauce or Stewed Fruit Brown Bread	Potato Salad Cold Roast Lamb Lemon Sponge Pie Mock Angel Cake Berries and Cream

MENUS FOR A WEEK IN AUTUMN

BREAKFAST

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Oatmeal Bacon Warmed Potatoes Sliced Peaches	Corn Mush Beef Hash Warmed Potatoes Baked Apples	Oatmeal Bacon Drop Biscuits Sliced Peaches	Wheat Farina Meat and Potato Cakes Apple Sauce Bran Gems	Oatmeal Creamed Codfish or Boiled Eggs Stewed Fruit Toast	Coarse Cooked Cereal Bacon Warmed Potatoes Sliced Sweet Plums	Wheat Farina Brown Bread Sliced Peaches

DINNER

Roast Beef Boiled Potatoes Green Corn Apple Pie	Beef and Tomato Pie Baked Potatoes Creamed Onions Sweet Pickled Apples Pumpkin Pie	Beef Steak Mashed Potatoes Buttered Beets Apple Betty	Stewed Chicken Pot Pie Mashed Potatoes Swiss Chard Apple Pie	Baked Fish Mashed Potatoes Carrots Cabbage Stuffed Baked Apples	Mutton Stew Baked Potatoes Sliced Tomatoes Pumpkin Pie	Roast Chicken Mashed Potato Creamed Cauliflower or Brussels Sprouts Deep Apple Pie

SUPPER

Cream of Corn Soup Shepherd's Pie Tomato Salad Coddled Apples Fruit Bread	Scalloped Potatoes Cold Roast Beef Sliced Tomatoes Stewed Pears Muffins	Cream of Onion Soup Macaroni and Cheese Tomato Salad Peaches and Cream Bran Gems	Cream of Chicken Soup Green Corn Bread and Butter Stuffed Baked Apples	Chicken Pie Tomato and Cucumber Salad Tea Biscuits Peaches and Cream	Baked Beans Roast Potatoes Celery Stewed Grapes	Potted Meat Apple, Nut and Celery Salad Bread and Butter Light Cake Peaches and Cream

ABSORBING POWER OF MILK

By W. H. Underwood

IT is a well-known fact that milk readily absorbs many volatile substances with which it comes in contact. It will absorb odors at one time when it would not at another time. It readily takes in vapors and odors from the air when it is at the same temperature or colder than the air that surrounds it, but parts with its own odors when it is warmer than the air with which it comes in contact.

When cold air touches warm milk the air expands, becomes lighter and rises, and as it expands its capacity for holding vapors, gases or odors is increased to such an extent that it is not only able to hold the odors and moisture it contained before but it is enabled to take in more; hence it is ready to take up, and does take up, any odors or vapors which are sufficiently volatile to rise out of the milk. Thus it appears that cold air, even if it is not quite as pure as we might wish for breathing, does not contaminate milk.

On the other hand when warm air touches cold milk the air becomes condensed, and its capacity for holding moisture and odors is so much diminished that it becomes unable to retain the load it was carrying and is forced to deposit its burden on the surface of the milk or cream in the same way that the air on a hot day unburdens itself on the surface of a vessel of ice water, where the deposit becomes apparent in the form of a dew.

Hence it is plain to see that the temperature has so much to do with the absorbing power of milk that if a pail of warm milk and one of cold are placed side by side in the same barn one will be growing purer while the other will be becoming more foul. But it is well to keep in mind that while warm milk will exhale odors in cooling, it is entirely possible that some undesirable odors may be absorbed at the same time, which may so impregnate the milk that it can be recognized hours afterwards. The air is seldom pure enough to prevent injury by contact with milk 10 degrees colder than itself.

Odors of the barn and other odors foreign to milk find their way into it quite too often for the good of those who use it. Just how these odors get there is often a mystery to the producer, and such a mystery is unfortunate because if one does not know how they get there he is unable to tell how to avoid them. The advice to hurry milk out of the barn as soon as possible after it is drawn from the cow is good because it must be apparent that milk will be better off out of the barn than in it, and when taken out the sooner it is run through the cream separator or cooled the better.

There are ways by which bad odors get in besides being absorbed by the milk after it is drawn from the cow. These odors are usually referred to as a "cowy" or animal odor, and while comparatively little is known about the nature of these peculiar odors it is not at all surprising that they exist and that they are imported to the milk through the breath of the cow. Standing in a barn that is filled with foul air it is impossible for a cow to avoid taking in at every breath the odors with which it is loaded. Upon entering the respiratory organs the odors are at once forced into circulation. The blood becomes charged with them and the milk, which always serves as a means of disposing of the impurities in the blood as well as its nutriment, also becomes loaded with the odors intensified. There is no surer way of producing milk with undesirable odors than by forcing cows to breathe the confined air of their stables, which is saturated with the fumes of their excrement and perspiration.

IN reviewing the agricultural conditions of last year in his annual report, G. R. Marnock, president of the Lethbridge Board of Trade, pointed out that despite the drought the results on most of the well prepared lands were remarkably good. His advice is that effort spent in preparing the soil will be well repaid in yield. Many farmers, he says, are not yet alive to the value of irrigation.

Chocolate-a food

IT is now universally admitted that chocolate is a food—a sustaining food.

During the war millions of tons of chocolate were sent to the Front.

Our Canadian soldiers early found that eating chocolate was not only pleasing to the taste, but restored vitality and gave renewed energy.

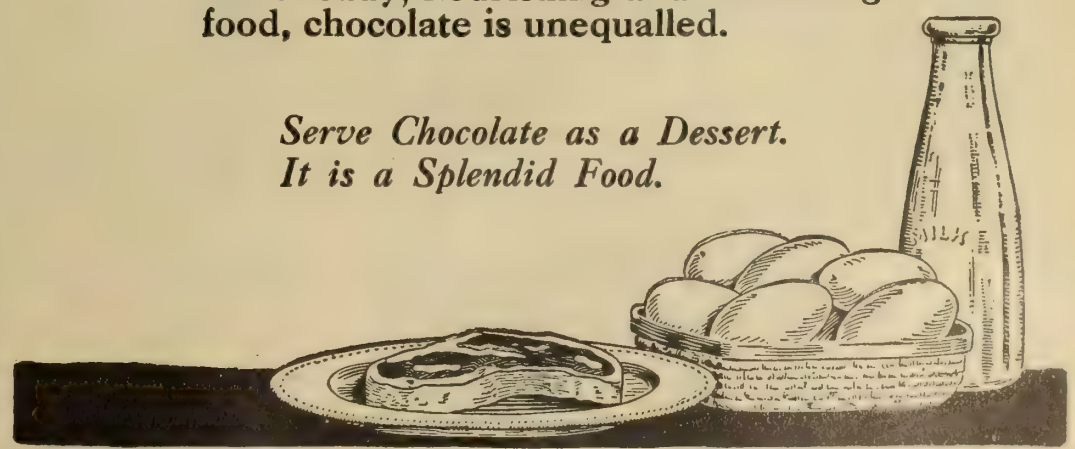
Brigadier-General L. W. Waller of the U.S. Marines, referring to the food value of chocolate, said—

"I never went into a campaign without chocolate. I always have a few cakes in my haversack when I go into action. Men fight like the devil on chocolate. Seasoned soldiers take it on the march with them."

It is a matter of actual scientific demonstration that one pound of chocolate produces the same amount of body-building nutriment as six eggs, a pint of milk and one pound of steak.

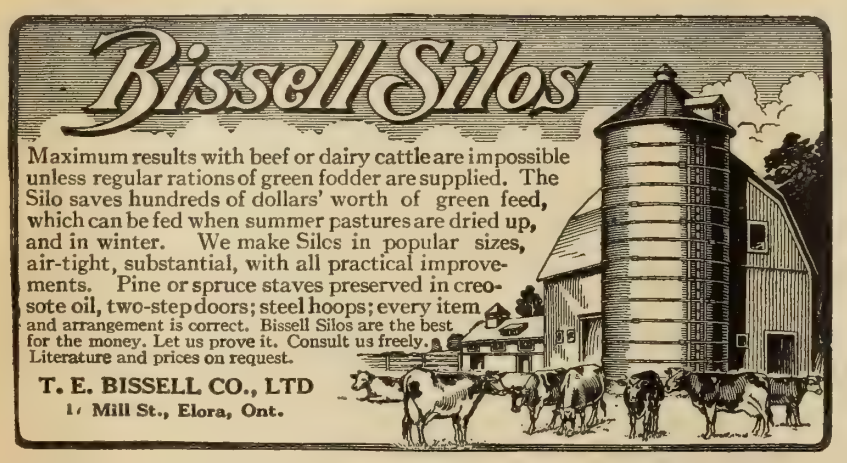
As a ready, nourishing and sustaining food, chocolate is unequalled.

Serve Chocolate as a Dessert.
It is a Splendid Food.



THE CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

7



VIEWPOINTS

Daylight Saving; a Farm Viewpoint

By A. H. C. NOWERS

LAST year saw the inauguration by legal enactment of a scheme for making use of an hour of daylight which, under the old dispensation, was spent by the majority of people in bed. We were ordered upon a certain day to put our clocks one hour ahead, to start our work one hour earlier in the morning, and to leave off one hour earlier in the evening. The original idea underlying this change was, superficially, reasonable, but its consequences were evidently not clearly or fully foreseen by those who introduced it. A summer's experience shows that, however beneficial it may have been in the city, the system is not only unnecessary, but absolutely detrimental to the farmer. The basic idea seems to have been this: that by bringing the working day to a close an hour earlier without actually shortening it the same output could be maintained, while a considerable saving in power and coal used for lighting and heating purposes could be effected. So far, so good.

By this plan, the public was supposed to be ready to tumble into bed almost as soon as it was dark, and be up again, bright and early, with the first flush of the growing dawn. The "Greater Production" slogan was also rung in as an additional inducement. The city man was to have a vegetable garden and spend the long light hours of the newly created evening in augmenting the national food supply. Many conscientious citizens did so, and with excellent results.

But whatever increase this brought to the national resources was most certainly more than balanced by the loss which it has entailed on the farmer. The small farmer who works his place single-handed does not go much by the clock; he works pretty well from daylight till dark in any case. He needs no spur of patriotism, no call to greater production to make him do this. He has to do it to get a living. He works for all there is in him, and no juggling with the timepiece can make any particular difference to his output.

The case of the man on the larger farm is altogether different. He has to depend upon hired help to get his work done, and hired help positively will not work overtime for any consideration he can offer. When six o'clock comes the hired man drops dead and cannot be brought to life again till the following day, whereby one of the best working hours of the farm day is lost. You may say that the hour has already been used in the morning, but this is a fallacy, as everyone knows who has had any real experience of farming. In the spring and early summer, when the work consists only in preparation of the ground for the crops, this first hour of the morning can no doubt be used to advantage, but from the hay harvest onwards it is absolutely lost. You cannot draw your hay and grain into the barn when soaking wet with dew. Mouldy hay and heated oats are of no value to man or beast, but that is most assuredly what you will have if you try to put away your crops too early in the morning, before the sun has had a chance to dry off the dews of night.

And with the fruit, the chief product of our Niagara district, the case is just as bad. The peach is a delicate fruit, and if picked and packed still wet with dew, will present but a sorry appearance by the time it reaches the consumer, and its selling value is diminished accordingly. No one in his senses would think of packing apples or pears in a wet condition.

We therefore cannot use our help so early in the day, but must hatch up some artificial and probably unnecessary job to keep them occupied until such time as our produce is fit to handle. Then, when the heat of the day is over and the best harvesting hour is at hand, the whistle blows and the worker quits. "From him that hath not shall be taken away even that which he hath." "Yes, we have none too much time for our harvesting in the best hours of the day, and yet our wise and good legislators take away one of the best hours and give us instead an hour which we cannot possibly make use of. Hour for hour may, theoretically, be a fair exchange, but, practically, it has in this instance a slight flavor of robbery.

Even suppose it could be used, that does not help the matter much. It is difficult enough to get the help out to work in field or orchard at seven in the morning; it is still more difficult to get them out at six. Putting the clock on to show seven when the hour is really six is a paltry piece of trickery. The consciousness that the time is really six is not to be thus easily got rid of, and the help turns out in grudging dilatory fashion, wasting the best part of an hour before they settle down properly to work. Such is the actual experience of a number of employers in the Niagara district last summer.

There is yet another drawback which the fruit man has to consider. His help in picking time has recently been to a very large extent, if not almost entirely, female, demanding greater consideration than is usually given to men. To send women and girls out in the early morning to pick amongst trees and bushes sodden with chilly dew is, quite apart from the question of damage to fruit, to inflict upon them a very real hardship. It is a cold, wet, and uncomfortable proposition, and a distinct menace to health. To soak in cold water at six in the morning, and stay soaked until the sun gets up power enough to dry the clothes upon you is nothing more nor less than to extend a cordial invitation to rheumatism and kindred ills. It may be all very well for those who are inured to it, but not for the help we have had to depend upon in recent years. And, as a matter of experience, the women simply will not turn out to pick before eight o'clock.

The farmers have given the system a fair and honest trial, and have found it greatly to their disadvantage. Some even found it impossible to continue, and after a while went back to the old time. And when all is said and done it was a very petty piece of deception, merely a fresh variety of that ancient dodge of pushing the kitchen clock a few minutes ahead in order to fool dawdling children into getting to school on time. The farmer is a genial soul, and does not mind a little foolery as long as it is harmless, but this particular bit of foolery is, as I have endeavored to show, positively hurtful, and he asks accordingly that it be repealed without delay.

MORE ABOUT SWEET CLOVER

By Grover C. Anderson

I FIND that sweet clover has a hard row to hoe in this part of the country to get it cut in time. It is very bad stuff to get cured as it takes good weather and there is seldom good enough weather to cure hay, when it should be cut. If a person cut it early and put it in a silo and saved it for seed it would be the ideal way to grow it. It has everything beaten I've come across yet for pasture after the spring grain has been taken off. It produces a quantity of pasture besides the cows milk well on it.

As I have cows in the R.O.P. Test, that is where you will find its value of the plant. For hay it is rather coarse. I feed the cows the last thing at night on sweet clover. It would certainly be great stuff if it could be cut early and cured well.

The leaves I feed to the hens. It is surprising how they like it and the young calves seem to do well on the leaves. It seems to be more like grass than any other hay.

SWEET CLOVER EXPERIENCE

By Nelson McDowell

IN spite of the prejudice of men who had many years of experience in farming, I decided to give the "weed" a chance to make good. A seven-acre field was chosen for the experiment. The land in this field was very light and so worn-out that it had failed to produce a crop for years that would pay for working the land. The field was ploughed in the fall; in the spring the clover seed was sown by hand and harrowed in. The growth of the clover was quite rapid as there was no grain crop to shade it. By August the field was used for cattle pasture. It was convenient to have fresh green pasture at that time of year when other pastures are dried up. When the ground froze that November there was very little sign of sweet clover to be seen. The cattle had eaten it all except the short little stems that appeared to have no life left in them.

During the following spring the late frosts heaved the roots but that didn't seem to make any difference. That field provided us with the earliest and by far the best pasture on the farm. The cattle gained faster than they would on good red clover and timothy pasture. When the plants were in blossom the cattle were turned off the field to give the plants a chance to go to seed. In August the clover was ripe. It was cut with a binder and threshed just like oats. Afterwards the seed was run through a clover mill to clean it and to remove the hulls. A grain grinder run by gasoline engine will often do as good a job hulling sweet clover seed as a clover mill. The field yielded about one and a half bushels to the acre and would have yielded much more if it hadn't been pastured. Sweet clover has very strong roots when the plants are green, but they decay as soon as the seed is ripe so that no roots are seen when ploughing the field. It is these roots and the nitrogen that they store in the soil that make sweet clover such a good fertilizer. Last summer that clover field produced one of the best crops of oats on the farm. I am doubtful if manure would have done as much good. This summer I saw a crop of corn, that would have done credit to heavy clay land, grown on soil so light and sandy that a crop of any kind could hardly be expected to grow there. The good corn was due to the sweet clover that had been grown on that field the previous year.

SAVING OF LAND IN FENCE ROW

THE investigator makes the point that when farm land is high priced, the amount of land covered by fence rows becomes a matter of importance. The following table shows the width of strips of land from the centre of the fence out on one side that are made untillable:

Kind of Fence.	Number of estimates given.	Amount of land made untillable. feet.	Rods of fence required to lose an acre of ground.
Woven wire	4,048	3.29	802
Barbed wire	3,853	3.42	772
Board	3,090	3.23	817
Picket	2,683	3.29	802
Hedge	2,356	7.6	347
Straight rail	2,066	3.57	739
Worm-rail	2,180	6.05	436

Should the fence run between two pasture fields, practically no land would be lost.

This means that you will practically save about 1 acre of land on every 100-acre farm by using wire or board fences, instead of the old worm-rail fence.

PEERLESS PERFECTION

For the Big Ranch, or the small farm, put up a fence that will last a lifetime, that serves not only as a mere boundary line, but one that gives real fence service—one that is built strong enough to withstand the onslaughts of stock as well as the ravages of all kinds of weather. *Prevents drifting in winter.*

PEERLESS Perfection is one of the easiest fences to erect, because it stays "put." It can be erected over the most hilly and uneven ground, without buckling, snapping or kinking, or run through streams without rusting. *It's perfection.*

Rebuild Canada by Canadian-built Fencing. When the boys come home they will want to see the old farm well fenced. They will be pleased with the Peerless Perfection. It's the all around fence for the Dominion—made in Canada—sold in Canada—used in Canada. See the lock herein illustrated—it's sure to hold—strong and tight.

Every Intersection is Securely Clamped with the Famous Peerless Lock.

Animals can't break through it no matter how hard their attacks. It simply can't be broken. Just springs back in shape like a bed spring. It's made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Will not corrode or rust. All wires are extra heavy. Will not sag. Requires less posts than ordinary soft wire fence. Absolutely guaranteed.

Send for Literature describing and illustrating many styles. We also make a complete line of Peerless poultry and ornamental fencing and farm gates.

THE BANWELL-HOXIE WIRE FENCE CO., LTD.

Hamilton, Ont.
Winnipeg, Man.

NEW AND SECOND-HAND
BAGS
POTATO, GRAIN, FLOUR, FEED
ELCO BAG & WASTE, LIMITED
65 PEARL STREET ADELAIDE 5549

Complete Fertilizer
ANALYSIS
2 Ammonia 6 Phoc Acid
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Write for price
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A RELIABLE LINE
EMPIRE Stoves and Ranges
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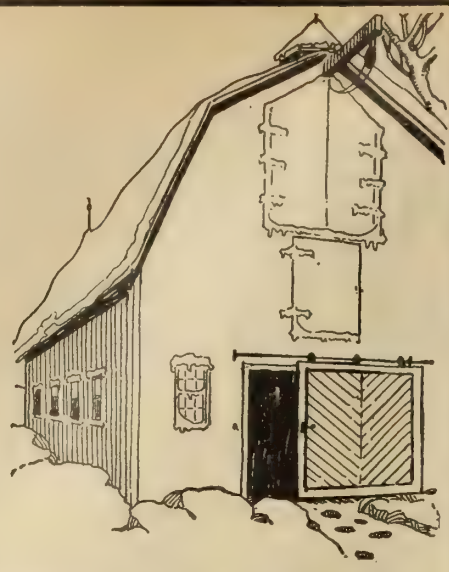
EMPIRE STOVE AND FURNACE CO.
521 Henry Ave. WINNIPEG
Owen Sound, ONTARIO

25% MORE MILK with SILAGE

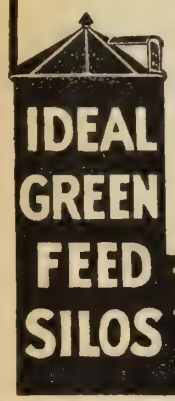


RIGHT NOW if you had a silo you would not only be getting 25% more milk, but you would be spending a great deal less for feed. With cream and milk at present prices, you must appreciate your need of a good silo more than ever, because there never was a time when good cows, properly fed, would return to their owner as great a profit as they do today.

RIGHT NOW is the time when an Ideal Green Feed Silo, filled with rich, juicy, milk-producing silage, would save your worrying about feeding so much high-priced grain and would be putting more milk in the pail every day.

RIGHT NOW is the time to prepare for bigger profits from your cows next winter. Our silo catalogue, which we will gladly send on request, contains a great deal of valuable information about silage and explains why the Ideal Green Feed Silo is the best to buy.

Write today for this catalogue.



The De Laval Company, Ltd.

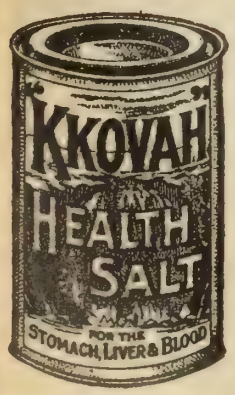
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

Keep the cows in clover all the winter long

Boys will be boys

and girls, girls. And if the youngsters do occasionally over-indulge in good things you can't blame them. Besides, they'll come to no harm if you teach them the "Kkovah" habit; a teaspoonful in water every morning when they get up. They like it, and its mildly aperient properties will clear the system and impart the glow of health.



Kkovah Health Salt

is quite safe even for the youngest children. Insist on KKOVAH —no other will do.

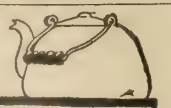
Obtained from Grocers, Drug Stores, etc.

Sutcliffe & Bingham, Ltd., Manchester, England

MEMO:

Don't forget to put a tin in the next parcel you send to your boy at the front. It'll keep him fit.

VOLPEEK



WILL STOP THE LEAK

Don't throw away your Pots and Pans. "Vol-Peek" will mend Graniteware, Tin, Aluminum, etc., in two minutes without tools. Always keep it in the house. At dealers or from us, postpaid, 15 cents.

Vol-Peek Mfg. Co., Box 2024, Montreal, Can.

LOVERS OF

Peonies, Roses and Flowering Shrubs

Write me for Catalogue. The best and cheapest in Canada. Mention this paper.

A. W. GRAHAM, St. Thomas, Ont.

FARM ENGINEERING

The Magneto and Farm Tractors

By C. K. NELSON

THE magneto can be truthfully said to be the heart of the engine, inasmuch as it performs that vital function of burning the compressed gas in the combustion chamber of the engine. This small compact unit known as the magneto is a source of energy in electrical form, which is capable of igniting this gas at the proper instant.

Briefly stated, on the downward or intake stroke of the engine a charge of gas is taken into the combustion chamber, and the upward or compression stroke compresses this gas into a very small space. At the instant that the piston crosses the top dead centre of this upward stroke the magneto is so timed and arranged that it delivers its maximum output at that instant. This tremendous force of electrical energy jumps the gap of the spark plug down in the centre of the combustion chamber, causing the compressed gas to ignite and explode, which drives the piston on its downward or explosion stroke.

One will readily appreciate, therefore, what a good magneto means to the tractor and the tractor owner. This gas must be fired each time that it is compressed. Therefore, the magneto must deliver a spark to each cylinder of the engine to do this, and further, it must be delivered in sufficient heat intensity to ignite all of these gases, otherwise the unburnt portion of the charges will eventually form a carbon deposit which interferes with the proper action of the valves, clogs up the spark plugs causing what apparently is a short-circuit, but which is in reality a bridge of carbon which has formed inside of the spark plug, and naturally the electrical current seeking the path of least resistance, follows this carbon rather than to jump the gap at the firing points of the plug, which is of higher resistance.

It will probably surprise the reader to know that there are more various kinds of basic metals and materials used in the construction of a magneto than any other part of his engine. It contains steel, iron, bronze, aluminum, platinum, irridium, insulating materials which must not be affected by water or exposure, silk, linen, copper, brass and many other materials too numerous to mention.

Further, it must be designed to take up the least possible space; it must not add any appreciable weight to the engine or tractor; it must be a self-contained unit, depending entirely upon its own construction to deliver the highest possible electrical output at all times; it must be of rugged construction to stand the wear and tear and intense vibration under all conditions; it must be waterproof and dustproof, and last, but not least, a great deal depends upon its proper installation by the manufacturer of the engine, that is, as to the correct setting or timing of the magneto, so that the spark which it delivers will be delivered at the instant when the compressed charge should be fired.

CREAM SEPARATORS AFFECT CREAM TESTS

By Wm. Woods

VARIATION of the test of cream sold to cream-buying stations and creameries often causes a good deal of dissatisfaction among cream producers. Not only does the variation result in cream sellers being dissatisfied but it also causes the buyers of cream uneasiness in maintaining harmonious relations with their patrons.

In practically every case the complaint of test variation is because of a cream seller not having a full understanding of the causes which affect the density and percentage of butterfat in cream. It is the policy of all reputable creameries that their employees exercise the utmost care to obtain accurate results in sampling and testing. The sample must represent a fair average of the cream delivered or the test, while correct of the sample, will not be a correct test of the cream. An accurate sample is therefore the first requisite for a correct test.

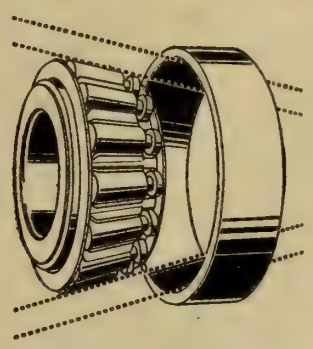
It seems to me that it must be well understood by all who use a cream separator and who have carefully noted the workings of the machine, or who have tested their cream at home with the Babcock testing outfit, that there is a variation in the percentage of butterfat in the cream. It is not at all unusual for there to be a variation of from 5 to 8 per cent. in test with no change in the cream screw of the separator and this difference is chargeable to the varying condition of the machine from time to time. But I have known of instances where there was a variation of from 8 to 15 per cent., this difference being due to improper handling of the separator, milk or cream.

Some users of cream separators do not give enough attention to the speed at which the machine is operated. The variation of the speed of the bowl causes a difference of from 2 to 15 per cent. in the test of the cream, depending on the variation of the speed. The variation in steadiness of the bowl of the machine makes a wide difference in test, depending on the amount of vibration. When we began to use a separator on our farm we did not believe that flushing the bowl would make any difference in the test of the cream, but we soon found that the amount of water used in flushing made a difference as great as 10 per cent. in extreme cases and from 1 to 5 per cent. in ordinary cases. The temperature of the milk when being separated makes a difference of from 1 to 5 per cent., greater variation being caused in extreme cases. Acid developed in the milk will have an effect on the density of the cream. This is not the case when the separating is done immediately after milking or while the milk is still warm, but when the night's milk is held until morning or vice versa, as is the case on some farms. As the bowl of the separator clogs the cream will gradually become thicker until the cream will not flow.

Imperfect straining of the milk before separating is another cause of variation in the test of the cream. We always strain our milk through a fine wire strainer into cans. Over the receiving can a piece of closely woven cotton cloth is placed. For convenience this is fastened with a strap around the can. This catches all sediment and gives the separator clean milk. Wide variation in the test of the cream must be expected if the separator is not fed evenly, or if at any time during the run the milk becomes clogged with dirt, so that the bowl does not take the full inflow of the milk.

Some users of cream separators may sometimes state that the cream screw of their machine has not been changed in years, and that their cream ought to test now as it did years ago. The fact that the screw has not been changed is good reason why the test of the cream should not be the same as when the machine was new. With use the cream screw wears off and takes the cream farther from the centre of the bowl and therefore a thinner cream is produced. Thick cream is produced by drawing the cream from the centre of

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Bearings that Stay New in Tractor, Truck and Motor Car

The job of tractor bearings—in wheels and transmission, on the pinion or worm shaft, at the differential or in knuckle heads—is to keep the expensive working parts of the vehicle from wearing out. Bearings can't do this job if they *wear out themselves*, or even if they just *wear loose* and stay loose. Therefore, they should *stay* new—and Timken Tapered Bearings do.

The tapered design enables the bearing to resist not only up-and-down loads, bumps and shocks, but also the heavy *side or end-pressures* inevitable in tractor service.

Naturally, with this *doubled power of resistance* to wear and tear, Timken Bearings stand up where less sturdy bearings would be ground to pieces.

Secondly—If a little wear does occur after thousands of miles, it can be quickly and easily corrected, just by moving the tapered "cone" and rollers a trifle farther into the tapered cup. This simple "take-up for wear" extends the life of the bearings indefinitely.

The following list of tractors equipped with Timken Bearings shows how rapidly tractor owners and builders are appreciating the vital importance of Timken taper.

Acme

Bates All Steel
Bates Steel Mule
Bean
Beltrail

Cleveland
Coleman
Community-Water Ballast
Craig
Cultitractor

Dart
Depue

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Evans

Fageol
Farmer Boy
Farquhar
Fordson
Four Drive

Galloway
Gile
Gray

Harrow
Hendy

Hession
Hood

Illinois

Lang
Lanson
Lynn

Maxwell
Moreland

National

Parrett
Post

Russell

R & P

Square Turn

Topp-Stewart
Tracklayer

Uncle Sam

Velie

Whitney
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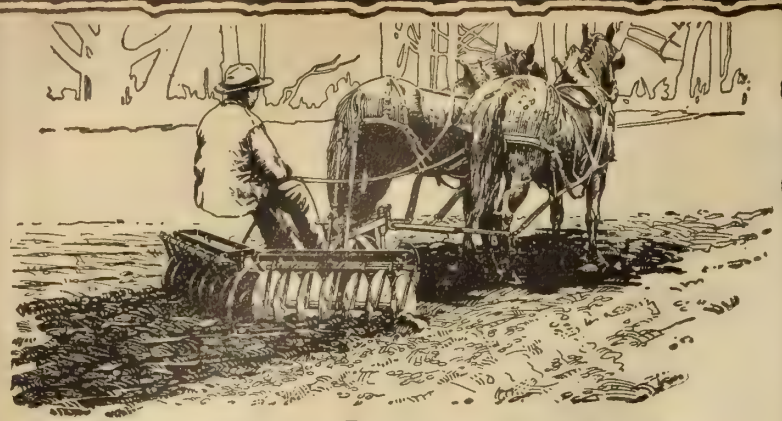
Wolverine

Write for free booklet F-9, "Timken Bearings for Farm Tractors."

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio



For Good Seed Beds

IF YOU want to be sure of well prepared seed beds, made in the quickest time and with the least trouble, buy **McCormick** disk, peg or spring-tooth harrows, **International** cultivators, and land packers.

McCormick bumper disk harrows, with or without forecarriages and weight boxes, are made in 6, 7 and 8-foot widths, with 16-inch disks. They have strong main frames of angle steel. Two handy levers working bowed set lever bars keep the gangs level at all angles. Draft links keep the pull always at right angles to the disk axles. All steel scraper equipment. Tandem attachments for double disking are made for all sizes. Used in combination with **McCormick** peg and spring-tooth harrows, they produce seed beds of the finest quality.

Use **International** No. 2 cultivators for keeping fallow land free from weeds of all kinds. **International** land packers compact the soil into the best shape for an ideal seed bed and leave a loose soil on the surface to prevent loss of moisture.

See the **McCormick** local dealer, or write the nearest branch house for full information about this good line of tillage tools.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

You Can't Beat it *for* Starting and Lighting

The M.S.L. storage battery responds instantly to the starter. It is the most dependable battery you can buy, because it is made by a firm that have been building batteries for 25 years. The M.S.L. is made in Canada and specially adapted to withstand our severe climatic conditions. You get more for your money as well as save money when you buy an M.S.L.

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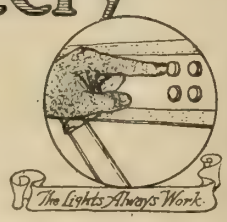
There is an M.S.L. Service station in your neighborhood where you can obtain expert advice free. Avail yourself of this opportunity to prolong the life of your battery. 3



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the bowl and thin cream by drawing from a point nearer the outside.

The test of the cream will be affected if the cream separator is not kept clean. It should be washed thoroughly as soon as possible after each time of separating. The openings must all be clean and free from dirt or the capacity of the machine will be affected.

Under average farm conditions it is impractical to operate the cream separator in such a way as to obtain an absolutely even density of the cream but care should be exercised to secure as even work as possible. Those who do not own a Babcock tester should buy one. A good outfit doesn't cost much and its use will better satisfy a cream seller with regard to the treatment he receives at the creamery and also give him insight into a number of things of considerable worth to him. The man who knows the most about his business is always the one who is the best satisfied.

BIG TILING WORK ON HIS FARM

By DAVID ELLIOTT

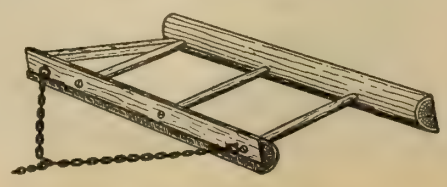
HENRY KNIGHT'S farm of 110 acres is situated outside of St. Catharines just beyond the canal bridge on Geneva street. The canal thereabouts is several feet higher than the surrounding country, and, of course, its channel is formed by dykes. Advantage was taken of the canal water level by the adjoining fruit growers and farmers, in that they tapped the canal banks and put in a small pipe to allow water to run along the roadside past their farms and thus furnish water for livestock, etc. This canal water, plus the rainfall, caused Mr. Knight's farm to be partially waterlogged along the land adjoining the roadside. This fact started Mr. Knight thinking of underdrains, and after consulting this office I persuaded him to put in a whole system of drains in his farm in view of the fact that his soil is a mellow, sandy loam, and he purposes to gradually work into truck farming and requires early spring work on the land. In all, 19 miles of drain were put in. He used 88,250 4-in. tile, and 7,530 larger tiles.

At present the farm is all under cultivation, and has been used to a small extent for truck gardening, and the fruit consists of peaches, 3 acres; pears and plums, with a few apples, 12 acres; grapes, 4 acres. The remainder of the farm has been used for grain and hay crops.

As previously stated, Mr. Knight intends to prepare for gardening by plowing in clover crops and applying compost manures, bought in Toronto. A small greenhouse will likely be built, and if truck gardening is a profitable venture, a large greenhouse and other extensive work will be carried on along these lines. Should this venture prove unprofitable, the larger part of the farm will likely be set out to choice varieties of peaches, pears, grapes and plums, with some strawberries, raspberries and currants to form a proper crop rotation.

In connection with underdrainage work in Lincoln County, I may say that when I arrived here in July, 1917, two ditching machines were operating here in a more or less haphazard manner. At present there are 4 machines, and between 70 and 75 miles of drains were put down in 1918.

Since the adverse wet seasons of the past 3 or 4 years, fruit growers are commencing to realize more than ever the advantage of underdrains, and we hope and believe that there will be sufficient work for 3, and possibly 4, properly operated ditching machines in Lincoln County for some time to come.



Get a road drag ready.

LUBRICATION OF GAS ENGINES

By E. H. THOMPSON

A large percentage of repair expenses is due to insufficient or improper lubrication. In far too many cases owners of gas engines use grades of oil entirely unsuited to their engines, notwithstanding the fact that in each case the manufacturer has furnished a long list of various brands and grades of oil which have been tested and found suitable to the engine in question, and which can be obtained practically anywhere in the country.

Another common error is to use too little oil. It is poor economy to try to save on oil. On the other hand, an excess of oil in the cylinder, while better than too little, will cause carbon deposits, followed by loss of power, overheating, and preignition. Heavy, bluish smoke from the exhaust indicates that the cylinder is getting too much oil, but it is usually advisable to furnish enough to give at least a slight trace of bluish smoke.

If the cylinder is oiled from the crank case by the splash system, the lubricant being used over and over again, the oil should be examined frequently, and as soon as it becomes badly discolored or very thin it should be drained out and new oil substituted. Many manufacturers furnish directions as to how often this should be done. Filling the crank case with kerosene after draining out old oil, and then running the engine a few minutes without load, in order to remove dirt and carbon from bearings and other parts, is frequently recommended. This is good practice where the crank case can be drained completely, but on many engines there are pockets which can not be fully drained, and the kerosene remaining in these pockets will thin the new oil. Under such circumstances the rinsing is of doubtful value. After such rinsing is done, the engine should not be run at full speed or under load until the new oil has had ample time to reach all bearings. The dirty oil drained off may be filtered and used for oiling other farm machines, but it should not be used again in the cylinder. If the oil in the crank case quickly becomes thin it is evident that some of the fuel is getting past the piston rings. This seriously affects the lubricating quality of the oil. It should, of course, be replaced with fresh oil, and steps taken to improve the carburetion so as to form a fuel mixture which will burn more completely.

Keep All Nuts Tight

It requires but a minute or two to go over an engine and see that all screws and nuts are tight, at the same time wiping off any oil and dirt which have collected. This should be done at least once every day the engine is used. Such practice will go far towards preventing many operating troubles, since all gas engines vibrate to some extent and this vibration tends to loosen bolts, nuts and other parts. This is always a potential source of breakdowns, if not of serious accidents. Furthermore, loosening of parts often results in a loss of power.

A BARN WINDLASS

By CHAS. SPENCE

TO any farmer that kills a beef or two a year, it is often a proposition to know how to raise it in order to dress it.

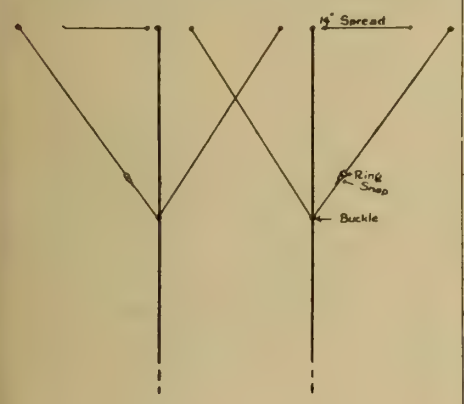
I made a windlass in the front barn door by taking a round pole about 5 in. in diameter and arranging it in each side of the door frame about 3 feet from the floor, which is a good thing to have there at any time to protect horses or cattle from falling out of the door. I bored a couple of holes through it so that I could use a couple of crowbars to turn the windlass. I fastened one end of the rope to this pole or windlass across the door and the other end through a pulley fastened on the beams over the barn floor and then down to your beef on the barn floor. You can fix it up in an hour or so. It is not in the way and is always handy.

A FOUR-HORSE HITCH

By Archie G. D. Clarck
Of Southern Alberta.

I HAVE seen many ways of hitching a 4 span of horses, but of all of them I use only one system that gives 100 per cent. control over any kind of horses from the gentlest to the roughest, on any implement, and most especially when turning on the ends of a field; it has an added advantage also of being the quickest hitch I can find and I've used many. It has still another advantage, that it gives the use of a team in the quickest possible way and that is of special value to the man who only operates one 4-horse outfit and has lots of use for team work.

The hitch is worked as follows:—Drive on the centre team, in other words, use the centre team as a team. Now insert in the buckles at the cross lines a short strap about 6 inches long on the end of which is a snap; that small strap can stay on the lines and is not in the way for team work. Now



get two spread lines long enough to go from the snap on the team lines to the outside bits of the outside two horses, use a snap on the bit end and a ring on the snap end; this, then is fastened quickly at the ring and snap as desired. Now make two short spreads of leather ¾-inch wide, or same as lines, and rivet or sew a snap on each end. This will be 14 inches long. You may need a little longer or shorter according to the size of horses you are using, but 14 inches answers well. Snap these from the inside bit-ring of the outside horses to the outside bit-ring of the inside team and you have the hitch complete and as handy for quick work as you could wish.

THE FARM WATER SUPPLY

By P. J. L.

A GOOD supply of water, as free as possible from pollution, is a necessity of first importance on every farm, for upon it depends to a large extent the health of the farmer and his family. Unfortunately, however, the matter never has received the attention it deserves. Convenience and first cost—not sanitary safety—have been the deciding factor in locating thousands of farm wells, too many of which are within a few feet of the back door or in the direction of the barn and stables. Close proximity to such places seriously impairs the water supply and makes it unsafe and destructive to health. Typhoid fever, tuberculosis, dysentery and diarrhoea are among the ailments caused or influenced by contaminated water; while many other diseases have been traced to water which carries the germs of infection.

Of course farm wells cannot always be so located as to avoid all pollution, but the great safeguards are clean ground and as wide a separation as is possible from the probable channels of any impure drainage. It is not enough that a well or spring be 50, 100, or 150 feet from a source of filth or merely upon higher ground, although even moderate remoteness and elevation of the source of supply are desirable. Given porous or gravelly ground, seamy ledge, or long-continued pollution of one flat of land, the zone of con-

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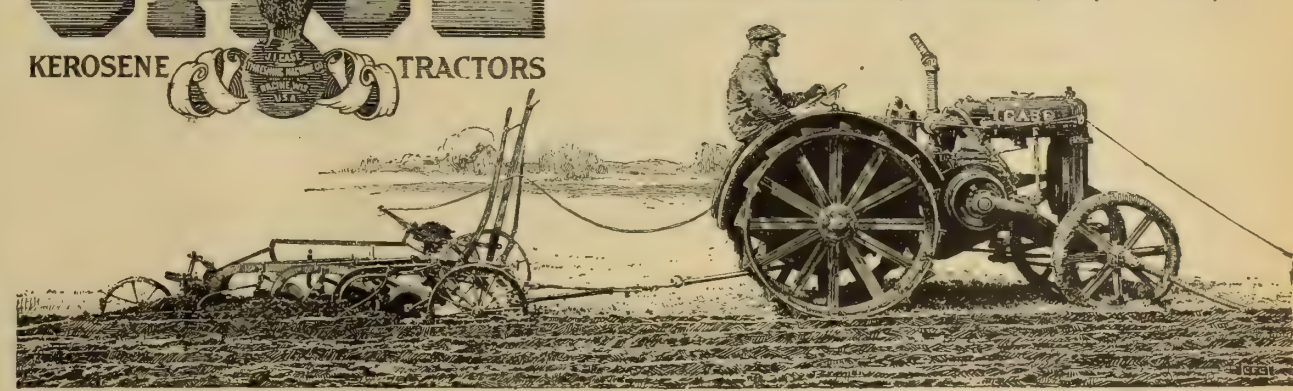

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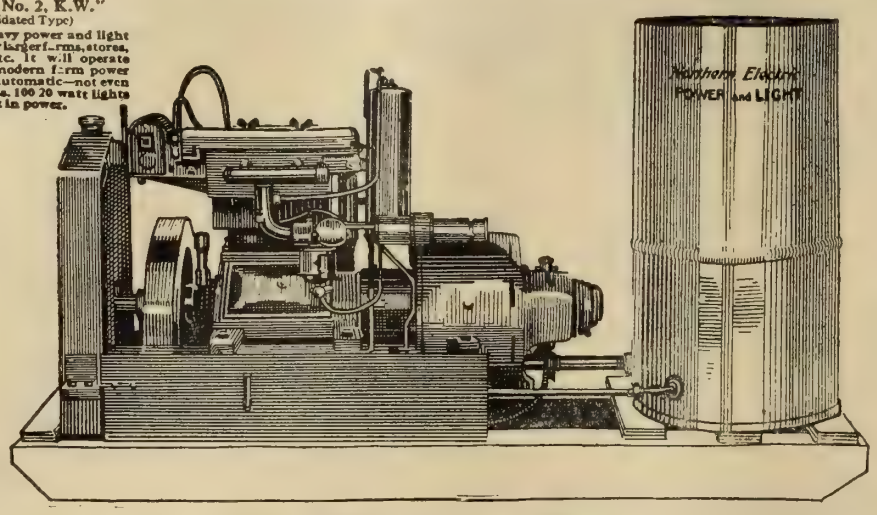

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—both are unnecessary evils. Drudgery is a menace to progress, a hindrance to liberty, and invariably responsible for the young folks quitting the farm. Now is the time to end drudgery and now is the time to investigate—

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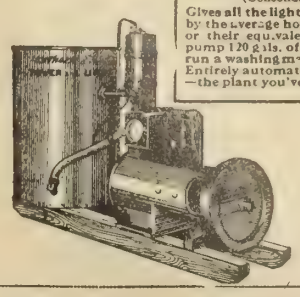

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tamination is likely to extend long distances, particularly in downhill directions, and as such times as water supplies are lowered by drought or heavy pumping. Only when the surface of the water in a well or spring is actually at a higher level—at all times—than any nearby source of filth is there positive assurance of safety.

OPERATES A LIGHTING PLANT

By J. E. McKinley

I HAVE had the pleasure of operating a lighting plant for a short time, and like it very much. The light is excellent, and the cost nominal. A forty watt lamp costs about 1-5 of a cent with engine running, and 1-3c off batteries. The plant will run approximately 4½ hours on 1 gallon of coal-oil. With fuel at 22½ cents, it costs 5c per k.w.h. when used direct from engine, but as far as I have been able to compute, it costs about 8 1-3c per k.w.h. for what is used when plant is not running. We have an automatic pump, which operates on approximately 200 watts. It takes about 100 min. to move the hand back 4 points, therefore it would seem as if the cost was as follows:

We also have an electric stove, which is giving better satisfaction than at first, owing, of course, to increased experience. It is a two compartment affair on the fireless cooker plan, being designed to hold the heat in the place where it is needed. It has a high and a low heat. It starts on high until a cooking temperature is reached, and then low heat takes care of all heat lost. High draws about 400 watts, and low about 40 watts.

The best plan for the use of it appears to be to place the food for the next day in the stove in the evening, when the engine should be run, giving it the high heat from the plant direct as long as needed (2½ to 3¾ hr. for each compart.) and then leaving it on low over night. In the morning, breakfast is cooked, as well as dinner and supper, but only what is wanted for breakfast should be taken out, and the rest left for the other meals in the stove. The plug may be pulled, shutting off the current until about 10 o'clock, when it should be reinserted again and left on low till 12, when it will be warm. About 4 p.m. it should be started to warm for supper. Warming over improves the food in an electric stove. I would figure the cost of cooking porridge, apple-sauce, potatoes and 4 or 5 pounds of meat as about 13 cents.

It is estimated that to cook breakfast for 4 people, with coal at $10 per ton, takes 10c; so it will be seen that the comparison is favorable. However, there is practically no heat derived from the electric stove. Our room is heated by a furnace. It would easily cook enough by the above plan for 4 or 5 people.

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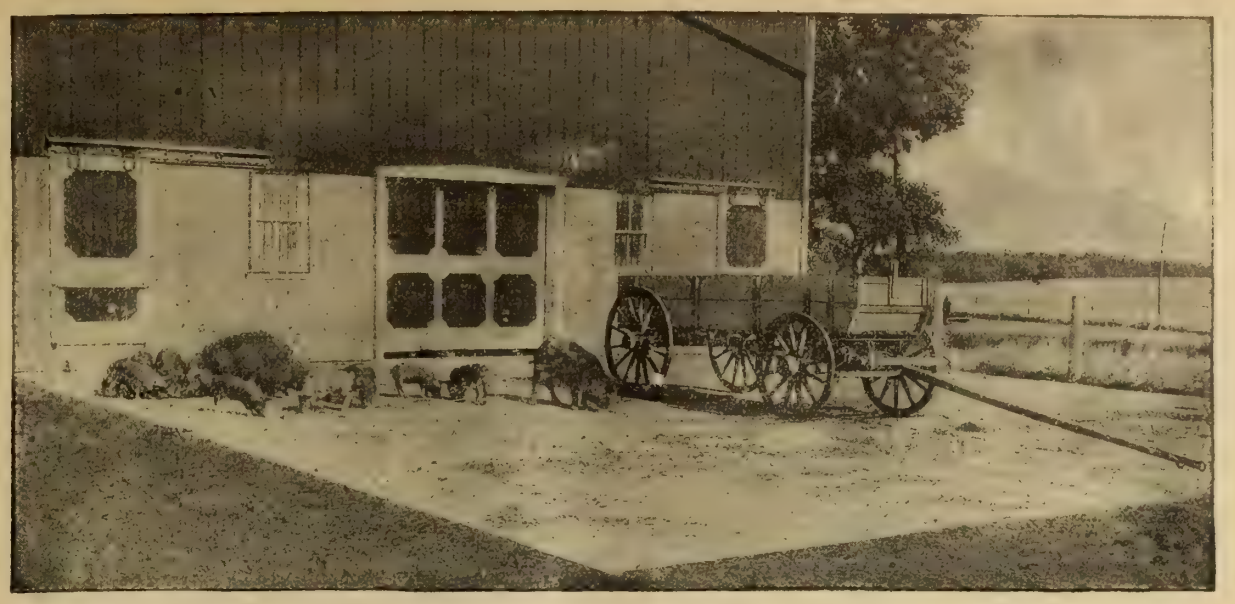
The question comes up, if this business of reporting is carried on, who is going to put up the expense of keeping extra clerks in the business and of the most of clerks and highly paid men at the other end?



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entitled "What the Farmer can do with Concrete," that has helped more than 100,000 farmers, will help *you*—by showing you how easy it is to construct improvements that are *permanent, fireproof, weather-proof, vermin-proof, repair-proof.* Contains 100 pages of practical suggestions with plans and full directions for building barns, foundations, floors—everything in fact, that is best made of concrete.

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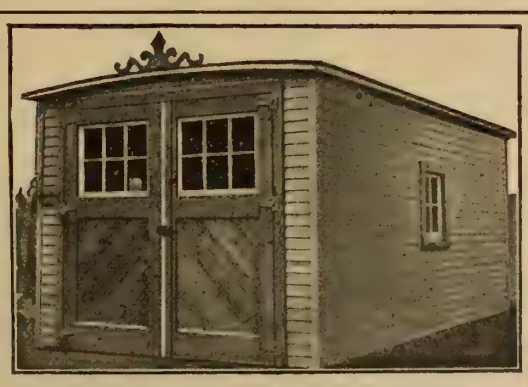

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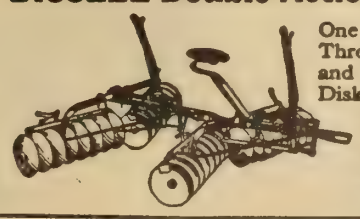

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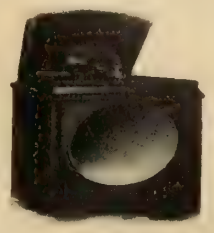

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LIVESTOCK

WHAT ABOUT GRASS PROSPECTS

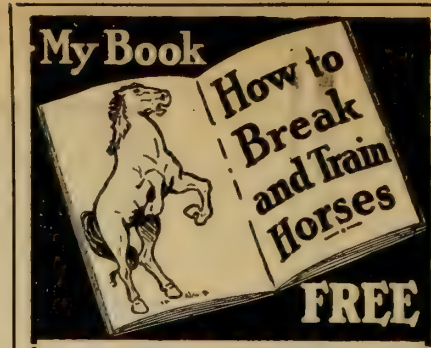
By Jas. E. Poole

AN unprecedented cattle situation exists as the rise of grass approaches. The steer man detects difficulty in replenishing pastures and is scurrying all over the country in a determined effort to contract something, paying little attention to quality, age or condition. This still-hunt is going on 24 hours daily from the Rio Grande to the Saskatchewan, Texas, which is engaged in restocking, having few cattle of either sex for sale. Corn-belt feeders who have taken the short route to market are unable to reinstate cattle, after jettisoning steers that could be fed another 30 to 60 days with economy. Light steers taken out during the bargain sale last fall have been returned this month in little better than feeder condition, weighing 900 to 1,000 pounds to realize $15 to $15.75, few of them having eaten much corn. Feeders have evaded expense by using a ration of corn silage, hay and a small addition of nitrogenous concentrates, making what is popularly known as war beef. Such cattle cost as much on the books as steers selling at $19 and $20. Of No. 1 beef there is practically none, an occasional load of bullocks selling at $20 and $21.10 that does not exhibit show quality or condition. Acres of short-fed steers that were merely good feeders have sold at $15 and $16, much of this product being used for Government contracts, necessity having forced the army people to take carcasses of 900 to 950-pound bullocks. Naturally markets are choppy under such conditions, and will continue so, fluctuations of $1 and $1.50 per cwt. weekly provoking little comment.

Trade scouts returning from the best feeding sections of the corn-belt report the *visible supply of beef for the next 100 days the smallest in 50 years.* East of Chicago conditions are even worse. Usually local butchers down that way fill orders at Chicago in April when supply in their own territory is exhausted; this year they have taken the market out of the hands of the big packers in February. St. Louis, Cincinnati and Louisville butchers have been forced to come to Chicago for cattle, the South having been drained. As the Government has been taking the bulk of the steer crop for military and export purposes for a year past, the drain on female stuff has been exhaustive, choice beef cows selling at $15 and heifers up to $17 per cwt. The real shortage will show up in March and April. Few distillery cattle are in feed and the "tween-hay-and-grass" period will find packers at their wit's end to replenish coolers.

While the Texas situation has improved conditions are far from encouraging, a severe winter in the Panhandle having caused considerable mortality. Despite enormous expenditure for feed losses are severe. The S.M.S. people expended $150,000 to carry their herd through the winter, but lost 6 per cent. of their yearlings. Frank Hastings, manager of the Swenson outfit, says Texas cannot get on a normal beef production basis inside of five years, even under favorable circumstances, having lost part of three calf crops by drouth. He estimates a 35 per cent. shortage on Texas beef production this year; other estimates run as high as 40 per cent., the fact being that *three years of drouth have seriously depleted the best breeding herds in the Southwest.* Arizona and New Mexico are in even worse condition. The Northwest has had a good winter, with enormous salvage of hay and would be making a lot of beef now if stock cattle were available.

Those who rely on supply statistics for "dope" overlook deficiency in weight. A year ago the trade considered 1,400 and 1,600-pound cattle heavy; now it is glad to get 1,100 and 1,200-pound bullocks. The country was then taking fleshy animals weighing 900 and 1,000 pounds; under new conditions feeders



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must be content with 700 and 800-pound steers. January cattle receipts at all markets were of sufficient volume to discredit the scarcity theory unless the investigator went behind the figures, when be discovered that it was a run of light, warmed-up steers of the poorest quality ever seen at the stock yards, with a raft of bovine junk, mostly dairy yard culls of the shelly variety, and light, ill-bred stockers that eked out a deficient supply in an emergency.

Prices may wobble, but a high level is assured until grass becomes a supply factor. A few weeks hence desperation will seize the country, caution will be thrown to the winds and pastures will be filled at dangerously high prices. Present levels cannot be maintained indefinitely, but just as long as the Government is under the market little permanent damage will be done. In the nature of things paying anywhere *from $10 for light stockers to $16 for flesh feeders is dangerous.* For a short feed prices may be warranted, but a radically different market may develop next fall, when demobilization has been completed.

Hoover is adhering unfalteringly to his hog market stabilization policy, by which packers are required to buy droves at an average Chicago basis of $17.50 per cwt., and there is no scarcity of hogs anywhere. Packers would be putting up $12 droves *but for the Food Administration policy, which has put many million dollars in growers' pockets.* Consumers are protesting. England has balked at paying heavy toll to the American hog grower, and other European countries are experiencing difficulty in getting credit, but Hoover is satisfied that he will be able to market every pound of excess meat production at prices that will reimburse packers. Meanwhile marketing the crop has been hampered by lack of killing facilities, hogs accumulating in the country, but the crop is working into stronger hands, indications being that supply pressure will relax in March. However, the fact cannot be concealed that *there will be abundance of hogs all summer.* Two years of high markets have so stimulated production that danger of an excess exists, the cotton-belt having gone into breeding with a degree of enthusiasm that promises to take the South out of the Northern market for nigger meat. A possibility of another comparatively low price period looms up, the only bull argument being beef scarcity. Great Britain bought 8,645,318 cwts. of bacon from the United States and 1,719,318 cwts. from Canada last year, but will not repeat the purchase and central Europe will soon be filled up at the prices. It will be well not to overlook the fact that 50-cent meat is a luxury and the European masses are not accustomed to luxuries.

Temporary shortage of sheep and lambs is maintaining prices. Colorado is feeding 50 per cent. less than last year, the corn-belt is about cleaned up and the market has gone on a substantial basis, lambs selling at $16.50 and $17.50, with sheep and yearlings at $10.50 and $15.50 — a condition that will not be disturbed until next August. The 1919 lamb crop will be large, the corn-belt having stocked up with Western ewes and the winter being favorable west of the Missouri River, hence growers are worried about the summer and fall market, apprehension existing that lambs will go to a $10 basis. This has prompted an "eat-more-lamb" campaign, it being an astounding fact that 80 *per cent. of lamb and mutton production is absorbed by the New England and Atlantic states,* little being consumed west of the Alleghenies outside Chicago. Producing lambs the public does not want is obviously doubtful policy, the "raise-more-sheep" campaign being unpopular at the moment.

Wool trade is emerging from a some-

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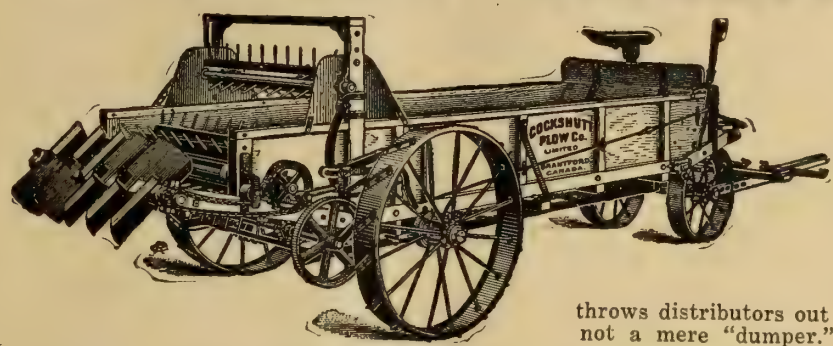

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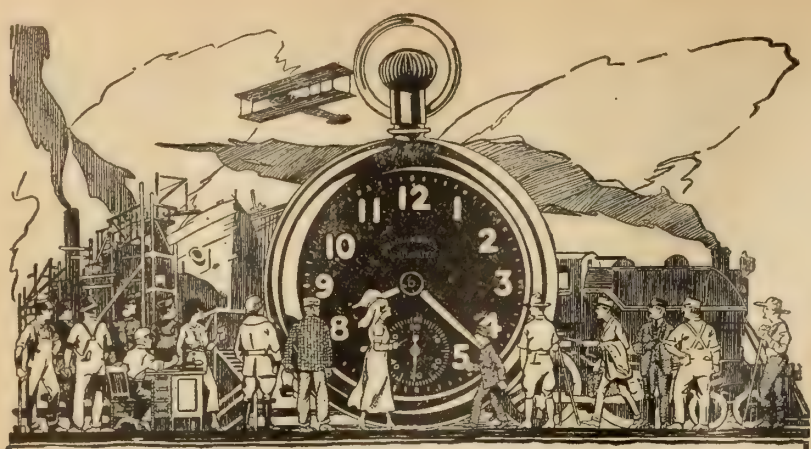

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what chaotic condition resulting from relinquishment of Government control. Washington has agreed to stabilize the market by withdrawing any part of its accumulation remaining unsold in July, until November 1, to give the new clip an opportunity to work with distributive channels without competition from the stall stock. It has also promised not to sell a pound below British issue prices. Choice wools have developed a strong tone, indications being that the market for the new clip will develop on a 40 and 50c basis, with choice grades even higher. An Eastern coterie of dealers and spinners has been making strenuous effort to use the Government stock as a club to depress prices, but *no grand larceny stunt of that character* will be permitted, as growers are in strong financial position.

The horse market has shown gratifying strength, the British holding having been absorbed at better prices than expected, $100 to $230 being the range at which the stock sold. United States and Italian horses are now being cleaned up, no prospect of an export outlet being detected.

J. J. ELLIOTT'S SALE

By C. F. Mackenzie

J. J. Elliott's sale of 45 head of richly bred Shorthorns at Guelph on the date advertised in FARMERS' MAGAZINE was a distinct success. Buyers from all over the continent were present. It is a satisfaction to know that Canadians picked up some of the plums. The fact of Ontario's strategic position on the continent as a breeding ground for the West and for other continental points is beginning to dawn on many people. Auctioneer Jones, of Chicago, in his characteristic style and story made every one feel good, and nothing quite so equals the bonhomie of a Shorthorn crowd on a sale day.

The 45 head offered sold for a grand total of $27,050, an average of $601. Eight bulls sold for an average of $586 and thirty fine cows averaged $614. One bull and cow sold together brought $850.

Rosa Hope, a beautiful three-year-old heifer, champion of the Canadian Circuit, 1918, and winner at Chicago International, topped the sale at $1,850, going to T. A. Russell, of Downsview. Mr. Russell also secured Emma 62nd at $1,400, and Queen Emmeline at $750. These are splendid individuals and Mr. Russell is to be congratulated on his Ontario vision.

M. & J. Schaffner, of Erie, Pa., took the second highest female, Roan Lady, at $1,550. Roan Lady is a real show cow, of great depth and thickness, possessing wonderful Shorthorn character.

Clarinda 17th, an imported cow, bred by Jno. L. Reid, Aberdeenshire, Scotland, went to Pettit Bros., of Freeman, Ont., for $1,200.

Princess Patricia, an excellent six-year-old roan, with a sappy, mossy-coated bull calf, was sold to J. G. Barron, of Carberry, Man., for $1,025. Mr. Barron is an old experienced breeder and knows the good ones.

Augusta of Langbank, a thick, low set heifer, was sold to Frank Edwards, of Tiffin, Ohio, for $1,000.

Newton Loyalist, bred by Major A. T. Gordon, of Newton Insch, Aberdeenshire, was sold to Wm. Johnson of the "Shorthorn World," Chicago, for $1,500. This bull won a great number of first prizes and grand championship throughout Canada. He has sired some wonderfully good offspring and as an individual he is particularly smooth, deep and thick, possessing remarkable quality. We only regret that this famous prize winner was permitted to leave Canada.

Jno. Brydon of Milverton, took Conquerer Crown, a roan yearling, for $825. This bull will be heard from later, being a strong topped animal exhibiting fine Shorthorn character combined with excellent quality.

Newton Perfection, a son of Newton Loyalist, is certainly "a worthy son of a worthy sire." He was secured by Robt. Miller of Stouffville for $750. He is a remarkably good type of individual, possessing the characteristics of a grand champion.

The following are the buyers with their prices:

FEMALES

Rosa Hope, T. A. Russell, Downsview, Ont.	$1,850.00
Roan Lady, M. & J. Schaffner, Erie, Pa.	1,550.00
Emma 62nd, T. A. Russell, Downsview, Ont.	1,400.00

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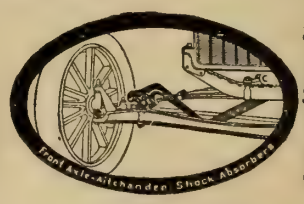

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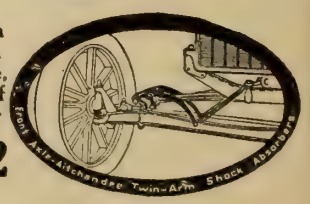

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Brawith Rose 2nd, M. & J. Schaffner, Erie, Pa.	1,000.00
Mistletoe Maid 2nd, Robinson Bros., St. Marys, Ont.	975.00
Irvine Side Emmeline, G. A. Attridge, Muirkirk, Ont.	950.00
Beaufort Rosemary 11th, Mr. Crowthers, Welland, Ont.	925.00
Gay Mistletoe 3rd, Jas. Moore, St. Marys, Ont.	825.00
Queen Emmeline, T. A. Russell, Downsview, Ont.	750.00
Princess Emmeline, M. & J. Schaffner, Erie, Pa.	600.00
Nonpareil of Hillside 26th, Fraser Auld, Guelph, Ont.	500.00
Cecilia Miss, Amos & Sons, Moffatt, Ont.	475.00
Beaufort Rosemary 12th, H. P. Peters, Carlin, Mich.	475.00
Rosa Lee 4th, Wm. Waldie, Stratford, Ont.	425.00
Ella, Hastings Bros., Guelph, Ont.	425.00
Orange Mysie, C. Yule, Carstairs, Alta.	425.00
Red Jessie, Jas. Davidson, Myrtle, Man.	425.00
Meadow Lady, A. Barber, Guelph, Ont.	410.00
Lily Maid 2nd, M. & J. Schaffner, Erie, Pa.	400.00
Diamond Maid, C. E. Elliott, Guelph, Ont.	400.00
Mayflower Bud, A. Barber, Guelph, Ont.	360.00
Graceful Queen, J. J. Merner, Seaforth, Ont.	350.00
Rosalind, A. Barber, Guelph, Ont.	330.00
Orange Maid, C. Yule, Carstairs, Alta.	325.00
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Princess Mayflower, E. Robson, London, Ont.	250.00
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Roan Mysie, A. Barber, Guelph, Ont.	245.00
Isabel 54th, W. W. Martin, Wallenstein, Ont.	210.00
Ringleader's Beauty, A. Barber, Guelph, Ont.	205.00
Mayflower Queen, R. J. Burr, Hamilton, Ont.	150.00
Isabel 55th, W. W. Martin, Wallenstein, Ont.	140.00
Rosebud 30th, Newton Defender, G. Bender, Alma, Ont.	850.00

BULLS

Newton Loyalist, Wm. Johnson, Chicago, Ill.	$1,500.00
Conqueror Crown, Jno. Brydon, Milverton, Ont.	825.00
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From the *Grain Growers' Guide*

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We believe we know the mind of the farmer and the conditions under which he struggles well enough to state that there will be no acceptance of the manufacturers' plea to leave things as they are. The farmers have organized for self-protection, and if they do not use their power to secure a square deal they are not worthy of Canadian citizenship.

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7-48-0—Horse and Cattle Fence. 7 line wires, 48 in. high, 9 stays per rod, spacing 5,6,7,9,10,11. Weight per hundred rods, 900 lbs.	54c
8-40—Sheep and Hog Fence—8 line wires, 40 in. high, 12 stays per rod, spacing 3,3¾,4¾,5½,7,8,8. Weight per 100 rods 1050 lbs.	63c
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10-50—Horse, Cattle, Sheep and Hog Fence. 10 line wires, 50 in. high, 12 stays per rod, spacing 3, 3¼,3½,4¾,5½,6,8,8,8. Weight per hundred rods, 1325 lbs.	80c

NOTICE!
These prices include freight prepaid to your nearest station in Old Ontario in lots of 200 lbs. or over. We do not pay freight on Electric or Steamboat Lines.
Write us for special prices on carlots, as a considerable saving in price can be effected as compared with L.C.L. shipments.
Fence put up in 20, 30, and 40 rod rolls.

MEDIUM WEIGHT STYLES

The following styles are made of No. 9 top and bottom wires, and No. 12 intermediate and stay wires of full Government gauge, and galvanized to stand an acid test:	Price per rod delivered in Old Ontario
6-40-16—Cheap Pasture Fence. 6 line wires 40 in. high, 16 stays per rod, spacing 7,7,8,9,9. Weight per hundred rods 570 lbs.	37c
7-26-16.—Hog Fence. 7 line wires, 26 in. high, 16 stays per rod, spacing 3,3¼,3½,4¾,5½,6. Weight per hundred rods 580 lbs.	37c
7-42-16—Sheep and General Purpose Pasture Fence. 7 line wires, 42 in. high, 16 stays per rod, spacing 6,7,7,8,8. Weight per hundred rods 640 lbs.	41c
8-34-16—Hog and Sheep Fence. 8 line wires 34 in. high, 16 stays per rod, spacing 3,3¼,3½,4¾,5½,6,8. Weight per 100 rods 670 lbs.	43c
9-42-16—A General Purpose Fence at a Low Price. 9 line wires, 42 in. high, 16 stays per rod, spacing 3,3¼,3½,4¾,5½,6,8,8. Weight per hundred rods 750 lbs.	48c
14-48-16—Special Garden Fence. 14 line wires, 48 in. high, 16 stays per rod, spacing 3,3,3,3,3,3,3,3½,4,4½, 4½,5,5½. Weight per hundred rods 1060 lbs.	68c

POULTRY FENCES

	Price per rod delivered in Old Ontario
18-50-P—Stock and Poultry Fence. 18 line wires, 50 in. high, 24 stays per rod, top and bottom wire No. 9, filling No. 13 hard steel wire, spacing 1⅜,1⅜,1⅜,1⅜,1⅜,1⅞,2,2¼, 2½,3,3½,4,4½,4½,5,5,5. Weight per hundred rods 1225 lbs.	80c
20-60-P—Stock and Poultry Fence. 20 line wires, 60 in. high, 24 stays per rod, top and bottom wires, No. 9 filling No. 13 hard steel wire, spacing 1⅜,1⅜,1⅜,1⅜,1⅜,1⅞,2,2¼, 2½, 3, 3½, 4, 4½, 4½, 5, 5, 5, 5, 5. Weight per hundred rods 1325 lbs.	88c
Farm Walk Gate 3′ x 48″	$3.85
Farm Walk Gate 3½′ x 48″	4.00
Farm Drive Gate 12′ x 48″	8.00
Farm Drive Gate 13′ x 48″	8.25
Farm Drive Gate 14′ x 48″	8.50
Farm Drive Gate 16′ x 48″	9.25
Barb Wire, 2 pt. weight 78 lbs per 80rd. spool	5.10
Barb Wire, 4 pt. weight 86 lbs. per 80rd. spool	5.25
Staples, galvanized, 1¾″, per 25 lb. sack, each	1.75
Brace Wire, galvanized, dead soft, No. 9, per 25 lb. coil	1.75
Stretcher, powerful single draw, 15 ft. chain	9.00
All iron, top and bottom draw heavy tested chain, extra single wire stretcher included	15.00
Sarnia Lawn Fence, Style C., galv. 42″ high (per ft.)	16c
Sarnia Lawn Fence, Style BB, galv. 42″ high (per ft.)	15c
Flower Bed Border, 12 inch (per ft.)	8c
Flower Bed Border, 18 inch (per ft.)	9c
Lawn Gates, Style C, 42″ high, 3′ or 3½′	$3.25
Lawn Gates, Style BB, 42″ high, 3′ or 3½′	3.25

If You Use Wire Fence Read This: The wire used in the manufacture of Sarnia Fence is made in the United States by the largest makers of wire in the world. Their product is recognized as the standard of the world. The Canadian Government stipulates the size of wire which will be allowed to enter Canada free of duty. No. 9 shall be over .140 and not exceeding .148 of an inch in diameter consequently it is impossible for manufacturers buying their wire in the U.S.A. to use undersized light wire, but must import full Government Gauge Wire. There are some Canadian Fence Manufacturers making their own wire in Canada. Such wire of course is not required to pass the Canadian Customs Regulations as to size, consequently if these manufacturers see fit they can draw their wire undersize and sell you a light weight instead of a full gauge fence. If you are placing an order be sure you are getting a full gauge fence such as **Sarnia Fence** and not a light weight.

Prepaid freight prices are quoted in old Ontario. New Ontario, Quebec, Maritime Provinces four cents per rod extra. Our office at Winnipeg takes care of all Western Canada business. Get our descriptive literature and let us tell you exactly what kind of fence you want will cost laid down at your home town. This is your fence factory. We are the farmer's friend. Thousands of Canadian farmers are regular patrons of ours. Your turn next. Various kinds of field, farm and pasture fence, lighter weights for garden and orchard purposes, special poultry fence, lawn fence and gates in variety and styles to suit the requirements of our farmer friends in Canada. Made in Canada for Canadian farmers, sold direct on our "save-you-money" plan. Heed our advise. Order now. Have your fencing on hand when you need it, and at our exceedingly low prices quoted above. Write today.

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Fill out this coupon—write plainly—cut here and mail to us

Gentleman — Please ship me at once the following fencing by prepaid freight. .....Rods, ...Wires .....inches high, ... Stays per rod; Spacing..... Amounting to $..... You will find herewith my remittance for it. My shipping station is ..... Ont.

Or ☞ Please quote prices on fencing as follows: .....Rods .....Wires ..... inches high.....Stays per rod, Spacing..... , net to me at my freight Station.....Ontario. I expect to buy fencing on or about....., 1919. Also mail me descriptive literature and your latest general price list.

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Address.....

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Carhartts are neat fitting and well tailored. They hang right; they feel right.

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The New 1919 Non-Skid Tread

Observe the tread on **Maltese Cross Non-Skid Tires.** The area of road contact is a continuous belt of thick, tough rubber. It is a means of reinforcement, giving extra strength, long life and endurance.

Like the keystone of an arch, this girth supports every segment of the tire. Its resistance is sufficient to reduce "flexing" to a minimum; it saves the internal fabrics from the wear of undue friction.

The new 1919 "continuous tread" on the **Maltese Cross Non-Skid Tire** is such a real big improvement that we want every motorist, who is keen on long mileage and freedom from tire trouble, to give this new-pattern-tread tire a trial.

Gutta-Percha & Rubber Limited
Head Office, TORONTO

BRANCHES.--Halifax, Montreal, Ottawa, Toronto, Fort William, Winnipeg, Regina, Saskatoon, Lethbridge, Calgary, Edmonton, Vancouver

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Canada, totalling over 700 head. Shorthorns are possibly more popular than Angus in Alberta, with Galloways quite in favor with a few.

Holsteins Lead Dairy Cattle

Dairy cattle are abundant, and of a high standard, the Holstein leading in point of numbers.

The Percheron and Clydesdale are promoted with comparatively equal force in Alberta, the former having a popular following among the numerous American farmers resident in the province. The Percheron has reached a very high standard of efficiency in Alberta. Not only have many excellent sires been imported at good figures, but Alberta is the home of the largest stud of Percherons in the world, that of Mr. Geo. Lane, near High River.

The interest taken in pure-bred livestock is demonstrated in the large and representative exhibits at Calgary and Edmonton exhibitions. Further than this, many breeds of cattle and horses are favored with a club of breeders organized to further the interests of the particular breed they represent. The Hereford Club has a large and enthusiastic membership, with T. Bellew, Calgary, as secretary. The Shorthorn Club has for its secretary A. E. Meyer, Edmonton, and the Angus interests are taken care of by N. F. Bell, Islay. The Clydesdale Club also is a live organization, with Mr. Adams, Calgary, as secretary.

CASH CROPS FROM FARMS

Continued from page 7

countries, even if it were possible to dispose of them that way. One occasionally hears a demand for the exploitation of new markets for dairy products. There are no new markets to be found. The only market which is worth anything is the one which we now have and on which our position will be all the better by increasing the quantity which we send to it.

The production of milk has increased during the war period, and now that labor conditions will be easier there should, and most probably will be, a greater increase to follow.

The Prairie Provinces will from now on be a factor in the export trade, and the indications are that the surplus available from these Provinces will grow rather rapidly. The creamery industry west of the lakes is well organized and is, generally speaking, in capable hands and is being managed with enterprise and marked ability. The Western creameryman is progressive, and is not handicapped by old established customs and practices which the Eastern creamery operator has to contend with.

FEEDS

COTTON SEED MEAL
(38½% Protein)
We can now fill all orders for this high grade dairy feed. Get our prices on car lots or less.

SEEDS
Get your orders in early. Our usual High Grade Field and Garden Seeds in Packets and Bulk are now ready. Get our prices on Ontario High Grade Seed Corn, Marquis Wheat, Oats, Barley, Peas, etc. We also handle—
Linseed Oil Cake Meal, Corn Oil Cake Meal, Gluten Feed (23% Protein), Bran, Shorts, Feeding Corn Meal, Sugar Beet Meal, Corn and Barley Chop, Schumacker, Stock Feed, etc.

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Ask for our list of Poultry Feeds and supplies. We can usually save you money.

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1866 — 1919

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Specially grown for Northern climate. This is the very best and earliest grown of all Tomatos. It originated at the Ontario Experimental Farm, Ottawa, and is the result of a number of years' careful selection. The fruit is round and deep, with a good, rich red color. Flesh firm and excellent quality. A great bearer—ripens two weeks ahead of other early varieties. TRY SOME THIS YEAR. Pkt., 25c. Oz., $2.00.

Write for 1919 catalogue It is FREE

GEO. KEITH & SONS
124 KING ST. E. TORONTO

THIS WASHER MUST PAY FOR ITSELF

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machines as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to buy the horse.

Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tube feature.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washerwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50 cents a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Please state whether you prefer a washer to operate by hand, engine, water or electric motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Better address me personally, B. I. Morris, "1900" Washer Company, 357 Yonge Street, TORONTO.

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The best varieties, viz., Williams' Improved, Senator Dunlap, Pokomoke, Parson's Beauty, Glen Mary, Three W's, Arnot, Stephen's Champion, etc., $5.00 per thousand or $1.00 per 100. Ever-bearing varieties $1.50 per hundred.

William Walker, Port Burwell, Ont.

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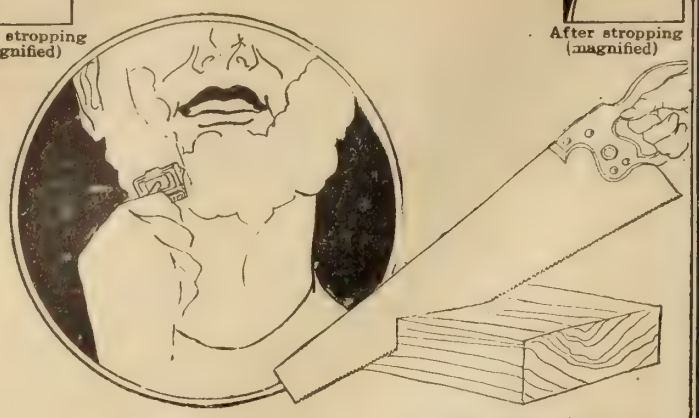

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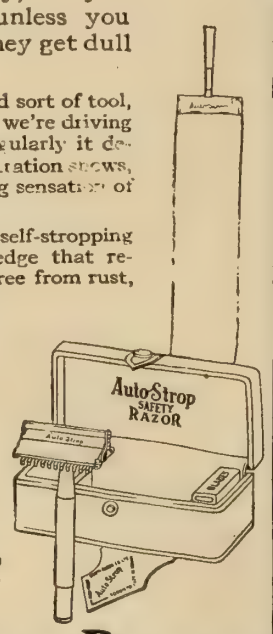

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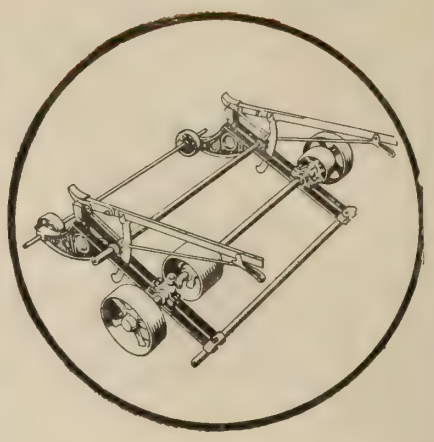

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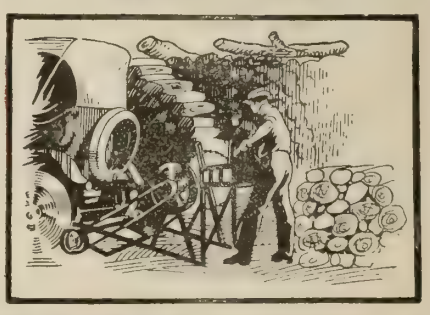

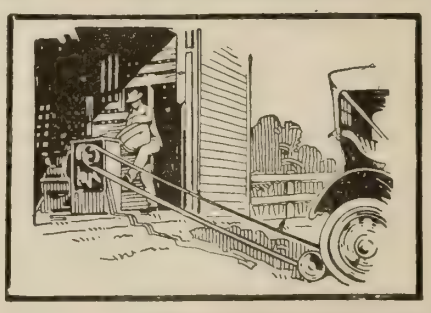

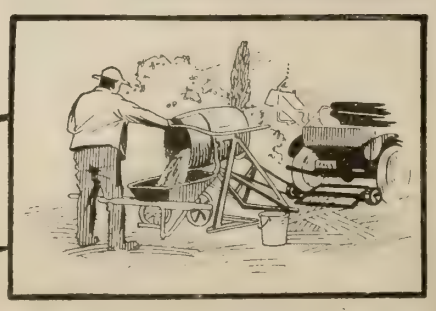

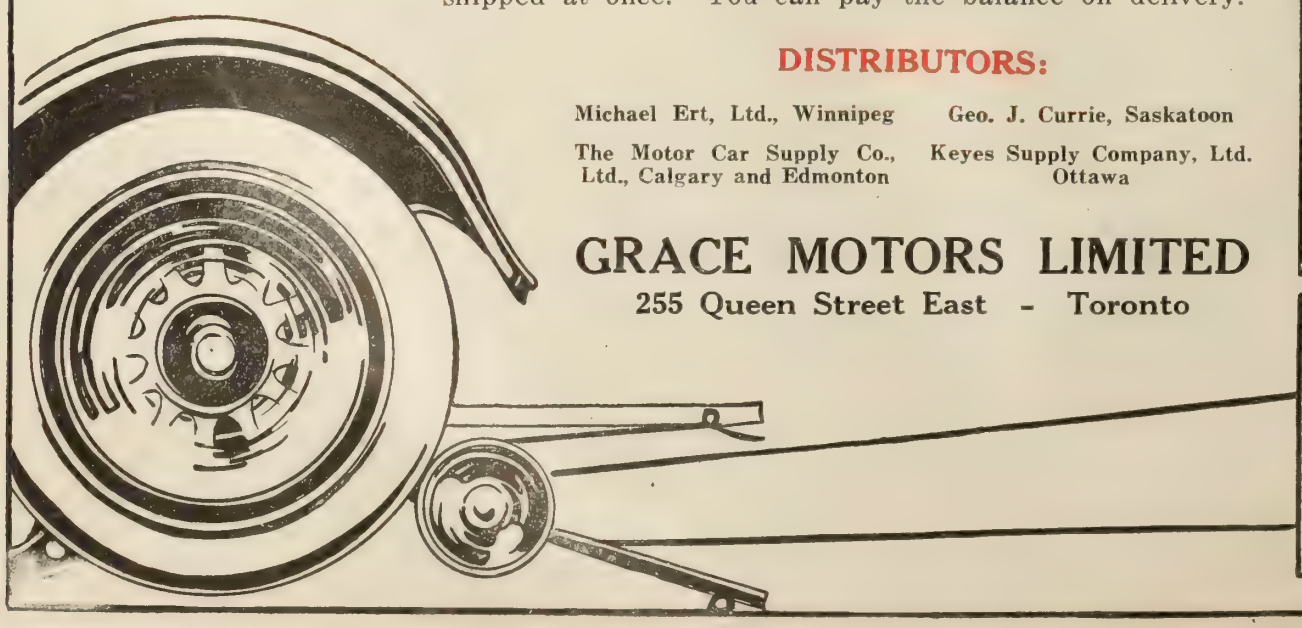

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Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto, Montreal, Winnipeg

VOL. XII, No. 5 MARCH 1, 1919 $1.50 Per Year 10 Cents Per Copy

See these Curved Wings

There are extra pound prints of butter for you in these curved wings. At prevailing prices these extra profits are well worth any man's while to investigate. The Renfrew is famous not only for close-skimming but for the excellence of butter made from the butter-fat it skims. Both these advantages are due to this invention. Only one separator in the world can give you these wings. That machine is the

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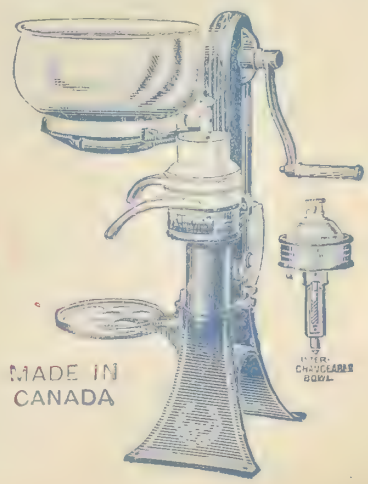
Besides, these curved wings mean better quality butter-fat. Instead of the milk being shot at the disc edges with such force as to break up the globules of fat, the wings conduct it evenly and smoothly in thin sheets, dividing it equally among the discs. With a Renfrew you not only skim down to the last drop, but your butter is always of firm, superior grade that commands a better price.

Wouldn't you like to see proofs of the Renfrew close-skimming records? Government Dairy Schools tests are fully described in our illustrated book; also other exclusive Renfrew features, including interchangeable capacity by which you can increase capacity without having to buy a new machine. Write for literature to-day.



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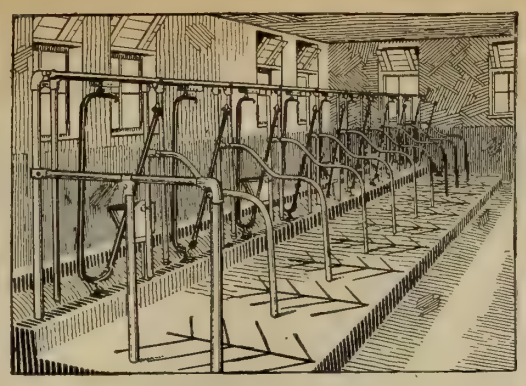
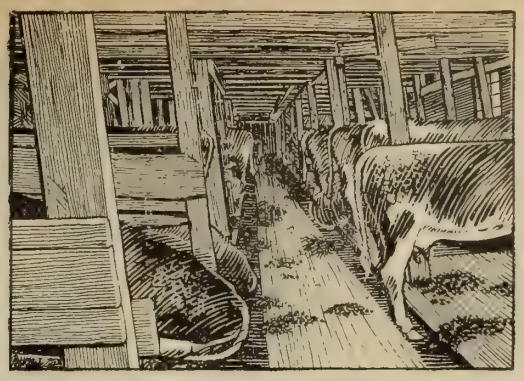
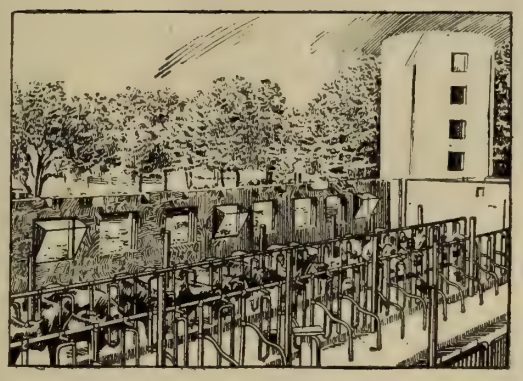


BT Sanitary Steel Stalls permit the sunlight to flood the stable freely. Sunlight kills disease germs. The steel stalls harbour no germs or vermin. They do not soak up liquid manure. Note the fine appearance of the stable.



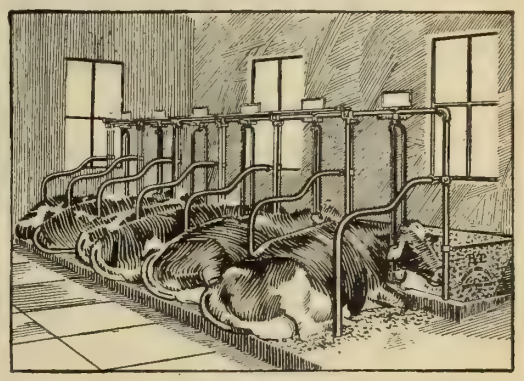
Here is a poorly lighted, unsanitary barn of the old type where disease germs thrive. Tuberculosis germs thrive in dark, dirty barns. Liquid manure soaks into the old wood stalls and is one of the chief causes of tuberculosis.

These cows are tied in the steel stalls. Note that they are lined up evenly with the gutter so that no manure falls on the cattle stand and none falls on the walks. This keeps the cows clean and saves much work in stable cleaning.

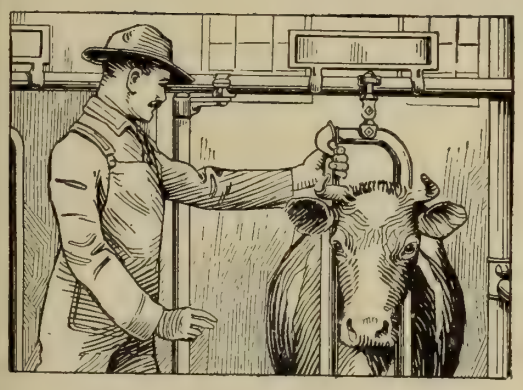


Here is the barn of Col. Robertson, Williamstown, Ont. It caught fire and burned to the ground, yet the steel stalls were uninjured, and after the fire the cows were tied up in their places and a photo taken. A few cents made the stalls as good as new. BT Stalls are fireproof.

Here is what happens to the old style barn when it catches fire. The old wood stalls burn up like matchwood and everything is a loss. Not only that, but it is also difficult to get the cows out because they tug and jerk at their chains, making it impossible to undo the chains.

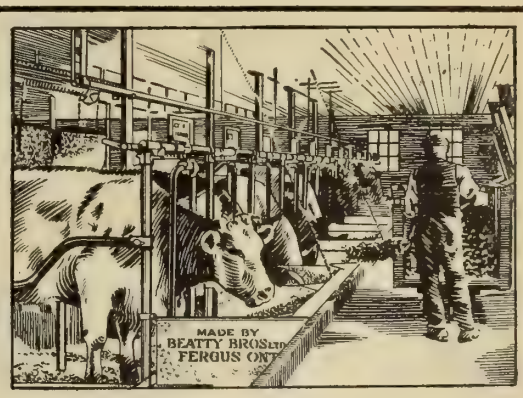


Every cow has her own manger in this stable and cannot steal from her neighbor. The fast eating cow cannot gormandize at the expense of the slow eater. With the truck the cows can be fed in a very few minutes. The time work saved by up-to-date stable equipment pays back much of the cost.



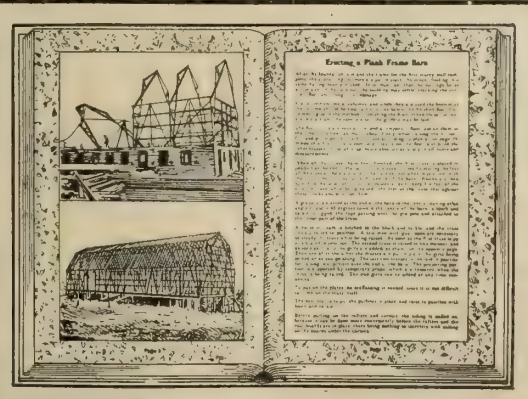
The BT Steel Stanchion is easy to open. This saves work and annoyance every day. You can open this stanchion with one hand. A whole row can be untied in less time than it takes to undo a single chain tie. This is very important in case of fire.

The old-fashioned chain tie is hard to open. This wastes time every day. It is a serious matter in case of fire, for the cow becomes terrified, tugs back and it is impossible to release her. In addition a chain tie is very uncomfortable for the cow.



Cows when tied in steel stalls have absolute comfort. They can lie down on either side, turn their heads freely and card themselves back to their flanks. Cow comfort increases milk production. Cows will give 10% more milk when tied in these stalls.

Here are the BT Sanitary Steel Calf Pens. A whole row of the calf stanchions can be opened or closed at once. Each calf has a separate pail and cannot get another's portion. The steel pens are sanitary and durable.



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For the Farmer

New Ontario Wants Farm Loans

By F. M. C.

THE farmers of New Ontario, particularly that portion lying between Fort William and the Manitoba boundary line, are beginning to look around for some signs of activity in the farm loan movement of the Ontario Government. A few sessions ago, upon representations being made from this district, the Ontario Legislature passed a Farm Loans Bill which was to come into operation upon proclamation by the Lieut.-Governor. Nothing further has been heard of the matter and farmers in this fertile district are finding themselves much handicapped by reason of Manitoba's fine work in this regard. All the enterprising young farmers and incoming settlers can get better terms in Manitoba, and so agriculture in the Rainy River and other districts is under a bad handicap.

Several delegates from the farmers there interviewed the Ministers at Toronto two weeks ago to urge the operation of the act at once. They were informed that the act had not been proclaimed.

Naturally they wonder what can hinder the operation of an act that the people had passed. It is their right to demand its privileges in this section and they feel that the revenues of New Ontario are being used to finance schemes in older Ontario.

"We are so far away from Toronto, and the rest of Old Ontario, that we feel more at home with Manitoba."

There is abundance of good farming land in this district, but the cost of clearing is heavy. Good roads are an absolute necessity, and it is highly advantageous to farmers here that they be given every encouragement in their individual enterprises.

ARE FARMERS IGNORANT OF BONDS?

I WOULD like to issue a warning," said Hon. Charles Dunning, Provincial Treasurer for Saskatchewan, in his Budget speech a few weeks ago to the many people in this province who purchased bonds for the first time in their lives, and do not have a very accurate knowledge as to what a bond is, and particularly what its real value is. "I have found during the last month or more evidence on every hand of people who are willing to take advantage of the ignorance or credulity of people in that position. I have received information of numerous cases of Victory bonds having been sold at a price far less than their real value, and I would say to the people of Saskatchewan, first, hang on to your Victory bonds, because they are good things to hang on to. In every newspaper the prices, the values on the stock exchanges of these bonds are quoted. Having found their value, I would advise people in the second place to do their business through a reputable broker, and not through some, yes, shark, who comes around the country wanting to sell people something and is willing to take Victory bonds in part payment at a big discount below their value."

FARM LOANS IN NEW ENGLAND

THE New England states are changing rapidly from their original racial characteristics by the influx of Europeans from foreign countries. These people have not American instincts and have to be educated to American ideals, nevertheless they are making progress in farming. In New England, New York and New Jersey, they have taken advantage of the National Farm Loan Association. There are now 128 loan associations in these states, and so far they have made 2,298 loans aggregating $6,225,295 from the Federal Land Bank of Springfield.

United Farmers have not been slow to take advantage of the farm loans. All told they have made 5,243 applications for an aggregate of $16,358,239.

YOUNG FARMERS SHOULD INSURE

TOO many farmers have paid out hundred of dollars in useless premiums to life insurance companies, chiefly under the benefit societies who either went out of business of who have raised their rates to be in line with the old line companies. These farmers have found out that they would have been money in pocket if they had taken out a policy on the 20-pay life plan, for $1,000 or $2,000 at a premium of say $30 per $1,000 per year. They could easily finance such a payment and at the end of 20 years the whole thing is paid up and the policy remains in force and adding profits to it until the time of their death. Thus the dependent ones are provided for, and this fact gives the owner far more peace of mind. A young farmer gets insured for $2,000 when he gets married at 25 years of age and pays say $60 a year for 20 years. At the age of 45 he has his policy paid up and it is likely worth about $2,300 or thereabouts and profits go on till he passes away and the total is paid to his wife or children. At the time his wife gets the full face value of the $2,000 even if he dies at the age of 26 years.

And every young farmer should carry life just as he carries fire insurance.

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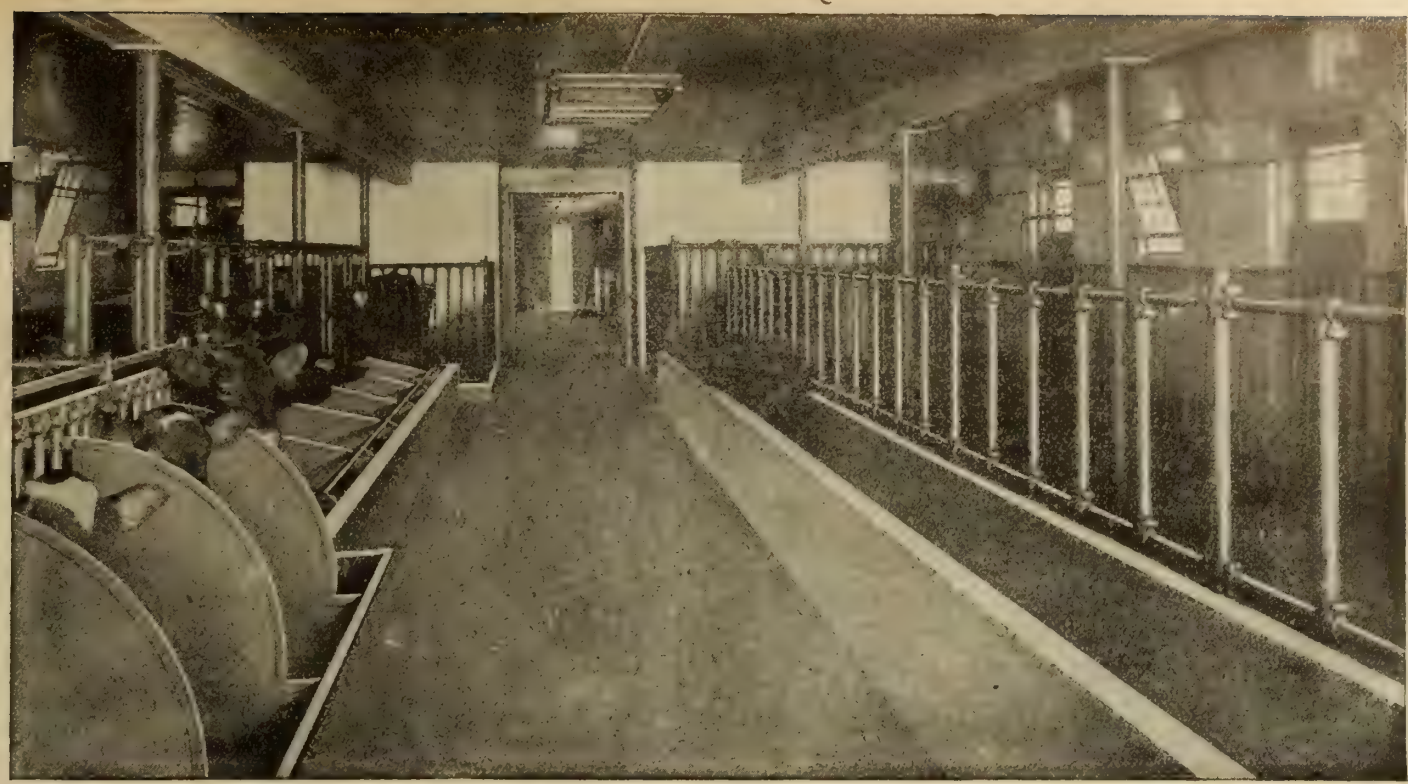
Savings invested in this way participate in the profits which the investment facilities and wide experience of such a company enable it to earn. And if the depositor dies before the end of the endowment term—even though death occurs after only one deposit has been made—the full face of the policy is paid to her dependents. At the end of the period, if she lives, she gets her money or takes a yearly annuity as she so elects. Most insurance companies issue endowment policies to women on the same terms as to men. Any woman who is interested in building up a competency to keep herself in comfort in her later years, or to care for a dependent mother or other relative in the event of her death, will find it to her advantage to investigate this plan for creating an estate.

SASK. MAY START BANK

THE Saskatchewan Grain Growers' Association that has just concluded one of the best annual meetings in its history, has had the question of a new bank brought prominently before the farmers of that big province. Farmers all along have been dubious about many of the amalgamations of big capital. These men have proposed that farmers could easily subscribe the total amount of the capital necessary to incorporate, by turning over their Victory bonds and not feel the move. Whether such a move will be worth while remains to be seen, as the Farm Loans Act and the present branch bank system have been taking care of farm business fairly well.



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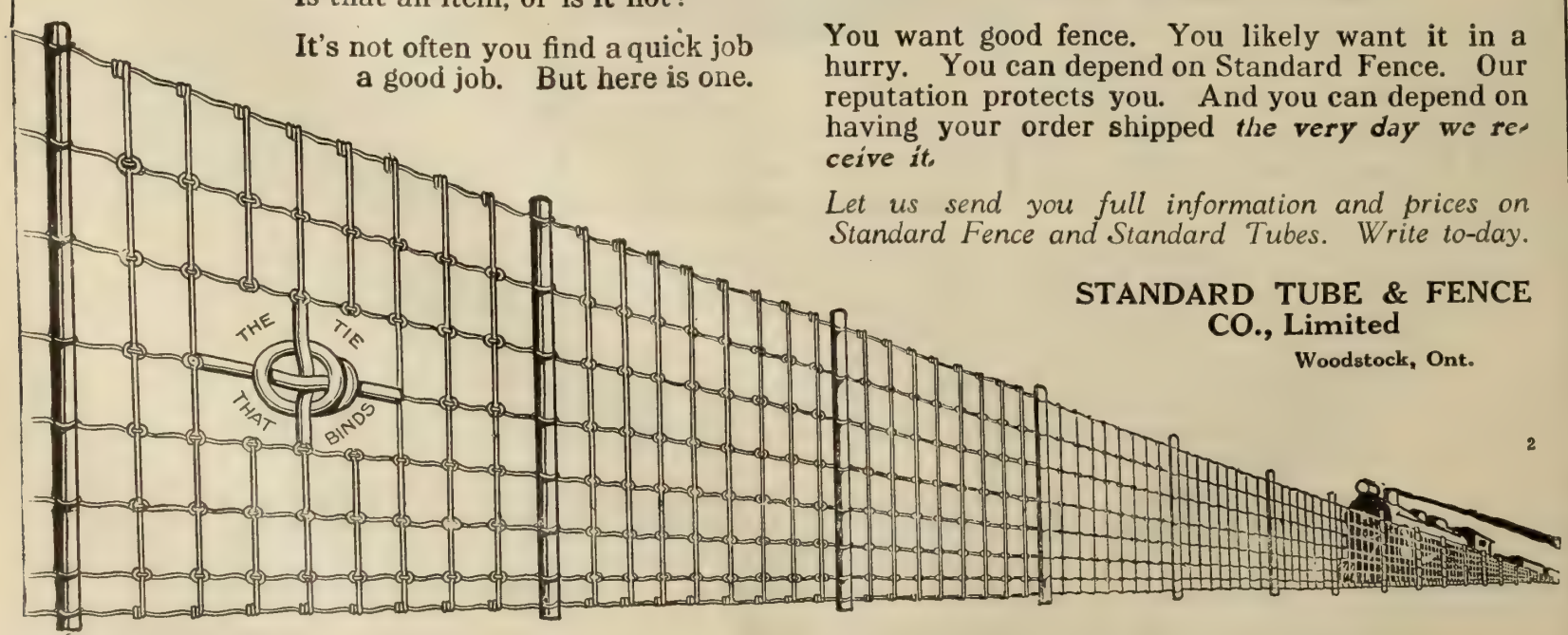

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Canada's National Farm Magazine

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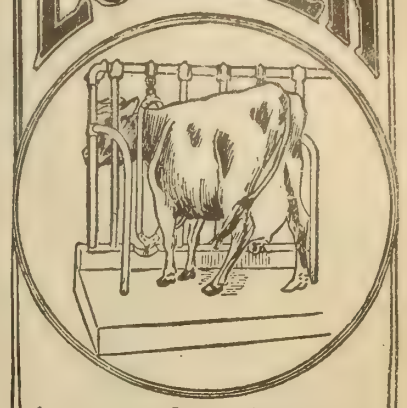

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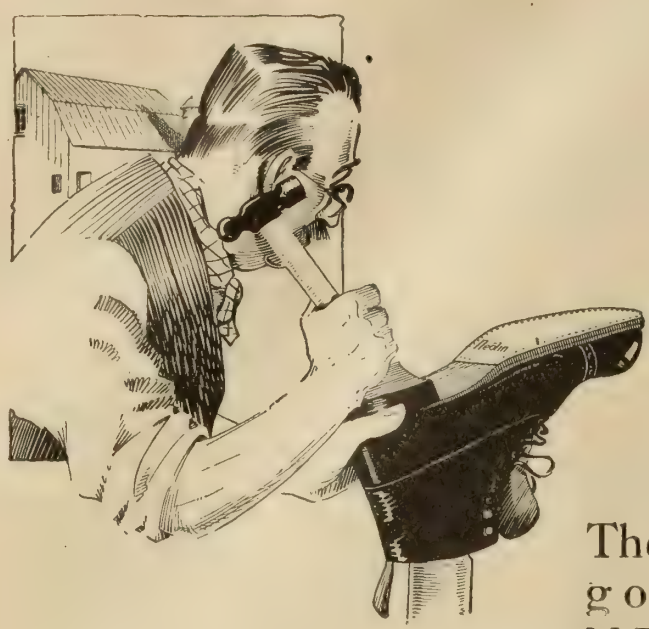

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FARMERS' MAGAZINE

CANADA'S NATIONAL FARM MAGAZINE

Vol. XII. MARCH 1, 1919 No. 5

Is Public Ownership Advisable?

By BENIAH BOWMAN, M.P.P.

The U.F.O. Member from Manitoulin

I HAVE been asked to present a farmer's view of the public ownership and operation of public utilities.

To me the proposal that the public should own and operate its utilities seems as self-evidently desirable as that the individual, whenever possible, should own and operate those things he uses exclusively.

When an individual discovers that things which he finds personally useful are also useful to others, and that he can join profitably with others in their operation, then good judgment would suggest that joint ownership and operation for their common benefit should follow.

Public ownership and operation of public utilities I regard as but a natural application and extension of this same idea to those matters which are common to the general public. In other words, ownership and operation should be co-incident and co-extensive with the interests of those directly affected. Upon those who oppose public ownership there falls, in my opinion, the burden of proving that a method so apparently correct in principle is not desirable in practice.

Fears the Politicians

What are the objections raised to public ownership?

It is said that politicians place personal and party interests above the welfare of the public and some fear to put in their hands the possibilities of further mischief, which public operation of public utilities would, they claim, give them.

In general, those who make this objection will agree that public operation would be preferable to private operation if we could be assured of an honest administration of public utilities. They see that *unified* operation produces economy and efficiency; that *public* control ensures that in its management the interests of the public will be supreme; that public operation would do away with all the expense, trouble and waste of energy which result from the attempt to compel private corporations to operate public utilities in the interest of the public. They also recognize the danger to political purity which exists because we allow corporations and monopolies to remain in possession of our industries, for they see that the most prolific source of the corruption of legislators and legislatures is the corporations and the rich men who are interested in them and that their removal through public ownership would be a most important step in the purification of our politics. But, notwithstanding these evident advantages, they fear patronage and favoritism would destroy the value of an otherwise estimable proposition.

Are these fears justified?

In the light of experience, the first obvious answer is that the loss to the public through waste occasioned by patronage and favoritism is infinitesimal when compared with the profits taken out of the public by the private owners of public utilities. Post offices, schools and roads once were privately operated (the last toll road in our province has just disappeared). Notwithstanding all defects, the results of the change from private to public operation are so satisfactory that no one proposes to return to the old method. Yet the reasons now urged against the public operation of other public utilties could be, and were, urged just as consistently in favor of the private operation of the utilities we have just named, and with more excuse. The early objectors lacked the experience which has proven public operation to be desirable.

But are corruption, favoritism, patronage and inefficiency necessarily inseparable from the government of a country? If under our present system they are inseparable, the obvious reply is, not that these evils should be permitted to impede progress, but rather that the system should be changed. In fact, this contention is not so much an objection to public ownership as it is an indictment of our partizan methods of administration. These evils are obstacles in the way of all national progress. Apparently and fortunately, public opinion is swinging in the right direction. Recent events have loosened the ties which formerly bound voters to their political parties. As a result the public vision is much clearer. There is an ever-increasing determination on the part of the citizen that the evils of our body politic shall be abolished, or at least minimized. Apparently though the public conscience is being thoroughly aroused and will be satisfied with nothing less than an honest attempt to remove the evils of partizanship and substitute a business system of handling the public business.

When based upon experience, public opinion is one very fair test of the merits of a system. On this point the history of the growth of public opinion in favor of the national ownership and operation of railways is illuminating. Belgium was the first country in continental Europe to build railways. She was the first country in the world to adopt state ownership, with the result that at the commencement of the world war she excelled the rest of the world in the proportion of railway mileage to territory, cheapness of rates, economy of operation and efficiency of service. Her good example caused the gradual extension of the idea of public ownership and operation of railways, until now, of the 65 principal countries in the world having railways on a considerable scale, in 50 railways are owned or operated by Governments. For war purposes the English Government operated all her railways. Now one at least of her present Cabinet Ministers declares that the railways must be nationalized. Upon her entry into the war the United States Government assumed control of the operation of the railways of that country. By the way, what more convincing argument in support of the public operation of railways could be desired than the fact that the Governments of both Great Britain and the United States found that when it was necessary that the nation should economize and make most efficient all its forces, state control and operation of its railways was absolutely necessary? Privately operated, those railways were inefficient. Publicly operated, they became efficient.

Nearer home, we have an illustration of the comparative benefits of public and private ownership. Its admirers claim that the Toronto Street Railway gives the most efficient service of any privately owned street railway. Yet the applications by the city of Toronto to the Courts to enforce efficient service as promised by the contract have been interminable, and aspirants for municipal public honors in Toronto make haste to declare themselves supporters of the public ownership and operation of the Toronto Street Railway.

Over against this example set the experience with the Hydro-Electric. Notwithstanding the imperfections which are said to pertain to public operation it is being repeatedly extended at the request of the public, but not as rapidly as the public desire. And who would suggest that it be handed over to private ownership? Experience counts and experience teaches.

The *"Farmers' Platform"* includes "the public ownership of railway, water and aerial transportation, telephone, telegraph and express systems, all projects in the development of natural power, and of the coal mining industry." While this is a start in the right direction, in my opinion it by no means exhausts the desirable list. As we gain experience in public operation, I believe we may confidently anticipate an increasing public demand for its extension until it covers the public ownership and operation of all public utilities.

The Brilliant Doukhobors

By CLINTON TUCKER

THERE was a time in British Columbia when the Doukhobor settlement at Brilliant was a very live subject. A reference to it is justified at this time, when Mennonite settlements in the Nechako Valley in Northern B.C. have aroused much public comment. At Braeside and Engen the Mennonite population a few weeks ago was around 200. The colonies are frankly communistic, and only beginnings. Where the Doukhobors are Russian, the Mennonites are German-speaking.

The hue raised over Doukhobors coming to British Columbia and taking up land near Grand Forks has almost entirely blown over. Whatever view is taken of their religious principles and strange community customs, British Columbia is willing to admit the Doukhobors are good business people and good farmers. They "mind their own business"; they progressively build up industries advantageous to the province at large. Last summer the Doukhobor jam factory contracted for large quantities of strawberries in the Fraser Valley, and sent their girl pickers down. And the girls, despite their sedate ways and severely simple dress, made an excellent impression. On their farm holdings they employ machinery extensively, have a power plant, and numerous factories. The British Columbia colony numbers a little less than 6,000 people, and its total community wealth runs into the millions.

The Doukhobors in British Columbia have about 1,000 able-bodied men. Many of the women, and children of course, also work. They own some 20,000 acres of land. They have eight sawmills, two brickyards, wood and coal yards, flour mills, a fruit nursery, a water system, steel suspension bridge across the Kootenay river costing $60,000, and a jam factory costing $25,000. They have 180 teams of horses, 200 head of cattle, most of which are milch cows, bees valued at $2,000, and an extensive and up-to-date equipment of implements and tools.

The Doukhobors are best known, perhaps, for their jam, sold as the "K.C." brand, of which they ship scores of carloads each year. Back in 1916 the turnover for jam alone was $1,000,000 and it increased heavily in 1917 and again in 1918.

The leaders of the British Columbia Doukhobors are Peter Veregin and John W. Scherbinnon, men whose business ability, straight, direct English, and general appearance are always a surprise to the uninitiated. There is nothing Bolshevistic about the Doukhobors.

FARMERS' MAGAZINE

Canada's National Farm Magazine

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WHAT ABOUT GRASS CATTLE?

NEVER in livestock history has been a greater scramble for feeding stuff to go on the spring grass than has begun in the United States and is beginning to develop in Canada. Orders by the thousands have been piling up in the buyers' hands, and United States markets have been swept clean, says the *Breeders' Gazette*, and even Canadian markets drawn on for the supply.

And just here looms up further danger for Canadian farmers. Of late years, the habit of buying car lots of feeding cattle for pasturing on Eastern farms, as well as the Western prairies, has been a growing one. James E. Poole, in the last issue of FARMERS' MAGAZINE, says that there is great danger of farmers putting more money into stockers than they will get out of them. That there will be need for all the good beef we can produce is sure, but that prices will be able to rise or even remain stationary a few months ahead is very problematical.

Last year farmers purchased cattle almost at reckless prices and came out on the right side of the ledger. But this year things are a little different and more caution and good judgment will be required if we are going to sell our cattle at the same price per pound that we purchased them at.

No one is competent to give advice on futures. The best word one can give is to be cautious, to buy as low as possible and to have your own grass.

TREE PLANTING

FARMERS and rural residents should seriously consider the planting of more trees this spring. Not only should every farm have a row of good suitable trees along the roadside, but woodlots and waste corners about the farm should be replanted to our native trees.

At present the Forestry Department of the Ontario Government supplies trees free to parties wishing to reforest hillsides or waste stretches. They ought to go further and conduct nurseries where the leading Canadian trees could be secured in bulk orders by any citizen for his own scheme of planting, at a low rate per 1,000, or 100 or 50. Such a procedure has been adapted by some American States. Ontario needs a tree planting revival.

THE CHILDREN WHO NEVER GROW UP

DR. HELEN MACMURCHY, who has given possibly more thought and investigation to the problem of the mentally defective than anyone else in Canada, has arrived at a very sane, sympathetic viewpoint. Professionally, mental defectives are standardized according as their powers of mind measure up with those of a child of two, three, seven or other numbers of years; the public must then get rid of its attitude of ridicule or condemnation and find some way of supervising, guarding and caring for them as children who never grow up.

A census of Ontario in 1905 showed that out of every thousand people there were ten who must be cared for and of these ten three or four were suffering from mental defect or mental disease. A certain number of these mental defectives are in institutions provided for them; others are in institutions never intended for them; others are still in their homes. The home care is usually a mistake and a tragedy. More often than not the home is robbed of comfort and safety for the rest of the family, and it takes really three people to care for one mental defective—two to give constant supervision day and night and one to provide a living for the four. In an institution, one person can take care of seven patients. Dr. MacMurchy qualifies her view of the advantages of institutional care with the rule that "No verdict should be given without coming into direct contact with the family and careful examination of the patient by an expert. The expert should always regard himself as counsel for the accused, he should try to think of him as normal." The influence of the mentally defective on the community, however, is undeniably, destructive to home life, detrimental to other pupils in school and an incalculable strain to the teacher, and tending to unemployment, immorality, the spread of infectious diseases, illegitimacy and permanent jail residents.

Dr. MacMurchy defines a mental defective as **"a person who cannot make or help to make a home."** The increase in mental defectives comes chiefly from the marrying of mental defectives; the Registrar General of England shows that the number of children in such families averages a little over seven. One of the first steps necessary to prevent feeble-mindedness is to prevent the feeble-minded becoming parents. "If we are only going to have auxiliary classes and then send them out into the world again to marry," she says, "we might about as well let them alone. They must have continuous, permanent, life-long supervision and assistance. Treatment in institution improves them enormously—there are islands in the brain of many a mental defective which the expert can discover and develop so that the patient finds some useful thing he can do and enjoy doing, but to ask these people who have been born without certain faculties to go out into the world and compete with others better equipped, to allow them to build a home, is as cruel as it would be to go into the street and strike a crutch from a disabled man."

One happy thought which Dr. MacMurchy suggests to parents of these children who never grow up is: "The patient will always be a child of six or seven. Do you remember how happy you were at six or seven? He will always have that happy, child-like attitude to life." And the mother distressed at the thought that her child may be taken from her, she comforts with the assurance: "No one can take your child from you. You feel, though, that he will always need someone to take care of him? Who will do that when you and I have gone?" And the coming model institution for the feeble-minded becomes a sort of universal mother, to whose care parents can give up a needing child without misgiving.

MOTHERS' PENSIONS

WE have a hopeful sign of the coming of a Mothers' Pension Law for Ontario in the sympathetic interest of the Government's representative, Dr. Riddell, and the way in which the people responded at the public hearings held in Toronto, Hamilton, Ottawa and London. Practically every party, sect and class in the Province was represented and while everyone agreed that there would be a lot of difficult details to work out in the administration, they were unanimous as to the justice and necessity of such a bill. Previous to the hearings, direct petitions had come in from the Trades and Labor Council, Trades and Labor Congress, Independent Labor Party, Women's Institutes of Ontario, National Council of Women, Local Councils of Women, National Executive of the I.O.D.E., County Boards of Agriculture, Presbytery of Toronto, the Methodist Church, Church of England, Baptist Church, Men's Own Brotherhood, the Municipalities of Galt, Port Arthur, Hamilton, Guelph, the Rotary Club of Hamilton, Canadian Club of Hamilton, the Ontario Educational Association, Ontario Social Service Council, Women's Canadian Club of Toronto, National Council of the Y.W.C.A., the Y.M.C.A. of Hamilton, the Salvation Army and fifty local groups of men and women from various parts of Ontario.

The system of a Government allowance for needy mothers has been well tried out in almost every State of the Union. Even in Canada it is not just an experiment, Manitoba has been granting Mothers' Pensions for two years, the legislation has been passed in Alberta and the matter is under discussion in Saskatchewan.

PUBLIC OWNERSHIP

READERS will be interested in the article on our opening page by a United Farmer of Ontario, member of the Ontario Legislature. As the session has commenced, the further development of these principles will be interesting. But why should we have public ownership of one industry and not of another? Why should the all-wise public operate a railway any more than a farm? Would it be a good thing if all our farm lands were nationalized, the ownership taken from all of us, and their operation be done by State? When the State does everything, what will we do? What is a public utility, and what is a private business? If I eat your apples, does not your business of farming become a semi-public one? Where will it end? Where is the twilight zone? Farmers should study these questions from all sides.

EDITORIAL NOTES

GET ready for spraying.

A GOOD soldier ought to make a good farmer.

FARMERS have to pay bigger prices, but take lower ones.

HIRE a good man at good wages and expect good service.

PEACE with Victory is only possible if each person acts sensibly.

MANY farmers are from Missouri—they have to be shown that public ownership will be a good thing.

A RECENT theory puts a lot of the blame for cattle tuberculosis on the small rodents, especially mice.

NORTH Ontario farmers have elected their man to the Legislature. That's four U.F.O members now.

DID someone remark that the Ontario Government lost the by-election because of the suggestive color of the motor licenses?

IF A bench of Judges can make a minority report, why not have the agricultural representatives dissent once in a while from the Cabinet?

FARMERS are against all unjust privileges. If the tariff becomes such a feature, then is when it is the object of attack.

NEW Ontario farmers are demanding farm loans under the Ontario Act passed a few sessions ago and never proclaimed.

WHEN public ownership wants to operate the farms because they supply universal needs, then we expect to hear some comments.

THE time for getting farm machinery ready for spring operations is at hand. No time should be lost in getting all repairs made.

DAYLIGHT saving is undoubtedly bad for many farmers, but also a blessing to many city people. Why not let each run their own time?

WHERE a soldier settles in your neighborhood, go out of your way to make him welcome and to assist him to get back into good agricultural life.

A RECENT Experimental Farm's note draws attention to alfalfa's value over that of sweet clover. Yet, as a pasture crop, sweet clover is making friends.

FEW men can have great powers thrust upon them without abusing that power. Sir Wilfrid Laurier was one of the greatest men Canada has yet produced.

FEEDERS of grass cattle this year have as much claim to a fixed price in the fall as wheat growers even under the plea of national encouragement to food production.

POTATOES won't grow, wheat made into bread, or farm finances pile up under orders-in-council. Some one has got to work to get these things. Too many of us want to boss the job.

RURAL Ontario never had an efficient system of rural police. Ex-soldiers make splendid members of police forces and there might be a suggestion in this, as the Brantford "Expositor" says.

THE grain growers of Saskatchewan have asked for a set price on 1919 wheat. The action of the U.S. in the matter makes such a move desirable from many farmers' viewpoints. The danger lies in having the question thrust into politics.

Periwinkles, Whetstones, Etcetera

By PETER McARTHUR

WHEN the Editor asked for a contribution to a "Reference Number," he was woefully indefinite. He did not suggest what I should write about. Apparently I am free to write about anything from "ant-hills" to "Zeppelins." The difficulty is that whatever subject I choose I am supposed to write something about it that may help out someone in a pinch, I am to write something that will be worth indexing along with sure cures for the "hollow horn" in cattle or "pip" in chickens. Come to think of it I had better begin by giving some words of advice and warning about the use of books of reference, and probably, reference numbers.

In spite of all the glib talk of agents who sell works of reference the unguarded use of them is not without surprising results. I remember hearing about a man who astounded everyone who made his acquaintance by the peculiar range of his information. He could talk easily and entertainingly about such diverse subjects as "alabaster," "felt," "Hyksos Kings" and "meningitis," but was as silent as a clam when it came to such subjects as "periwinkles," "Satsuma Ware," "whetstones," or "Zanzibar." It turned out that this singularity was due to the fact that in his youth he had started in to read an encyclopedia. He began at the first page of the first volume and intended to read right through to the end, but when he reached the letter "M" he got so interested in the article on "Money" that he lost interest in everything else and devoted the rest of his life to collecting as much of it as possible. As might be expected of so methodical a man he succeeded and became a society favorite. At first the peculiarity of his education was quite a trial to his hostesses, but when they learned to understand him it proved a real blessing. For instance, if things were going slow, all they had to do was to introduce some subject such as "Australia," "Flamingoes," "Coal Production," or Metallurgy"—it didn't matter what it was so long as the initial letter preceded the letter "M" in the alphabet. When once started the good man would flow on, shedding knowledge like a Normal School. And it was just as easy to turn him off as it was to turn him on. All the hostess had to do was to change the conversation to the "Nebular Hypothesis," "Soapstone," "Whiffle-trees," "Ypsilanti," or a similar subject. Instantly her guest would be rendered silent for he knew nothing about subjects whose initials came later than the letter "M." In this instance we see a case where a man might have suffered harm from the lop-sided character of the information he acquired from a work of reference, had it not been for the astuteness of the society women with whom he came into contact.

His exasperated friends bound him up in book form

In trying to attach a moral to the above illuminating story I was about to quote the familiar tag:

"A little learning is a dangerous thing.
Drink deep or taste not the Pierian Spring."

BUT just as I was going to put it down I happened to remember the case of another man who had read his works of reference carefully. He had read them through—"drunk deep"—and remembered everything. No matter what subject happened to be raised this "tedious sink-of learining" would turn loose his stream of carefully collated facts until he came to be regarded as a public nuisance. Finally his exasperated friends and neighbors had him bound up in book form, with a leather back and pasteboard sides. Then they placed him in the reference department of a Public Library. As I recalled his sad fate I realized that it would not do to advise anyone to drink too deeply of even such valuable information as is to be found in a work of reference.

Personally I hold works of reference in high esteem. They are valuable, not only for the information they contain, but for the labor they save. They do away with the need of remembering things. Although this has not been accepted as an educational dogma I see no need of cluttering my memory with facts when I can have them ready at hand in a work of reference. Why should I strain my memory to fix in it the exact symptoms of Botulism or the proper proportions of various chemicals to use when mixing fertilizer? A work of reference will carry such facts much more accurately. When a man has once learned how to use works of reference or the card index in a reference library he can write an article or prepare a speech that will give all the indications of vast learning and infinite research, without spending more than an afternoon on the job. Suppose I wanted to write an article on the Czecho-Slovaks. I know nothing about them—never heard of them until they began to assert themselves a few months ago. If I had this task assigned me I would go to the reference department of some good Public Library and busy myself with the card-index. In a few hours I could be in touch with all the important books and articles written on the Czecho-Slovaks. It would then depend on how much the editor wanted. Without having made any special study of the subject I would be in a position to write either an article or a book. And when it was done I could proceed to forget about it.

SPEAKING of forgetting, reminds me of a personal experience regarding works of reference. On one occasion a subsidiary branch of the Standard Oil Company wished to have an authoritative booklet written on the subject of mixing paints. The job was offered to me at an attractive price, and I accepted. Hunting up a master painter, a man who handled most of the big painting contracts in New York, I induced him to let me interview his expert on paint mixing. After spending a few hours with the specialist and making many notes I proceeded to write instructions for mixing paints that would be the last word on the subject. The manuscript was submitted to the oil and paint company interested and accepted with warm praise and a satisfactory cheque. Then I proceeded to forget all about it.

Some years later when living in the suburbs of the great city I was doing some spring fixing about our home and decided that the garden fence should be painted. Going to the hardware store I submitted my needs to the hardware man. I wanted the necessary materials and confessed that my chief difficulty was that I didn't know how to mix the paint.

"That's all right," said the hardware man. "Here is a little book that tells in a simple way just how to mix paints."

Then he handed me the booklet that I had written myself some years ago. My enthusiasm for painting ended right there. Other people might be able to mix paints according to the rules laid down in that book, but I knew that I could never do it. I went and hired a professional painter to do the job. I suppose I must not ask if any of the authoritative articles in this reference number are written by men who are just as practical in their knowledge of the subject dealt with as I am in my knowledge of the best methods of mixing paints.

As I have been accustomed at all times to using works of reference, I have developed a few rules that may be of use. The first is:

If any subject interests you look it up in the first spare time you have. Even though you may not commit the facts to memory you will gain a familiarity with them that will make it easy for you to look them up at any other time when you may need them.

He got interested in an article on money and lost interest in life

NEVER trust your memory, no matter how good it is, when making a quotation or stating a fact that may be verified in a work of reference. In this connection I confess that although I have a fairly good memory I cannot trust it. Take the quotation from Pope used above. When I wrote it a few minutes ago, I felt absolutely certain that I had used it correctly. But when I began to state this rule I thought I had better look it up. The result is that I find that I had one word wrong. The last line reads:

"Drink deep, or touch not the Pierian spring."

I have been using that quotation on and off all my life, and did not know that I was using it incorrectly until I looked it up just now. I would be willing to wager something that if the average reader of this magazine would take the trouble to verify his favorite quotations and the things that he is sure of he would find that in many cases he is wrong in some particular. When you are sure you are right it is time to suspect that you are wrong. If you acquire the reference habit you will find that it is a liberal education in itself, if rigorously adhered to.

There was another rule that I laid down for myself in my early studies that I regard as the most useful of all, though it is the one from which I have departed the farthest. When reading I made it a rule to look up every unusual word I met and after mastering its meaning I made a vow never to use it. This excellent rule, which made for brevity and clearness of expression, I adhered to religiously until I took up writing as a profession. As the editors paid me by the amount of space I filled I gradually relaxed the severity of my rule and began to let the big words slip in. The bigger they were the more money they earned for me, so I continued to slip and fall until now I am perfectly shameless in the matter. I pick up a sesquipedalian word wherever I find it and watch for a chance to slip it over on some unsuspecting editor. But if they will persist in paying at space rates what can they expect?

He handed me the booklet I had written myself

PETER GOES TO OTTAWA

PETER McARTHUR attended the funeral of Sir Wilfrid Laurier at Ottawa, and in his report to the Toronto *Globe* said:

"When the funeral service was over and we passed out of the dim aisles of the Basilica I looked up and saw with sudden exaltation that the sun had broken through the mists and clouds and was shining down as if mourning had been turned to rejoicing. So it seemed, and so I shall believe it to be. I, who had come in from the fields and the open spaces, felt that a great work was ended and that a greater had begun. I felt that all that had raised this man above his fellows and apart from them was now put away. The last ceremonial was ended. Now that his body had been laid in death with the Kings and counsellors of the earth, the spirit of Sir Wilfrid Laurier, a man of the people, had passed into the wide spaces, golden sunshine and open air to the land he loved, to be an inspiration to all Canadians as long as chivalry, courtesy and high achievements are prized among men."

A FIELD THAT *is* RIPE

Hospitals and Better Health Protection for the Country

By ETHEL M. CHAPMAN

ONE of the things the times have brought home to us very forcibly is the preciousness of human life. The war and the epidemic that swept the country like a plague this fall have taken a tremendous sacrifice of lives just when they seemed most needed here. One of the country's big pieces of restoration work is, clearly, to save all the lives we have left—and not only to save them but to save them, as far as possible, in the perfectness of health.

All over the country people are discussing fitting memorials for the soldiers who have given their lives to make it possible for humane, philanthropic, Christian living to go on. After other wars it has been the custom to express our gratitude in monuments of bronze and stone, in tablets of brass and stained-glass windows, while the rank and file of those remaining go on suffering their common woes just as they did before the war was fought. It is a wonder it has never occurred to us that if our memorial funds could be set to work to save the lives and ease the burdens of these, there would be more of us left to remember our dead. Our cities and large towns are fairly well-equipped with hospitals and provision for every kind of medical attendance; it is in the country and the newly settled districts that the people suffer. Further, even where there is a hospital service the very rich and the very poor are the best cared for—the former because they can afford it, the latter because charity provides for them; the middle-class wage-earners or salaried people often find the hospital fees and doctors' charges beyond their means. Municipal hospitals established throughout the country districts would not need to be charitable institutions, though there would have to be some provision for free care for those who could not afford to pay—but the municipal hospital could bring the cost of medical attendance within the means of the average citizen. Where the experiment has been tried in Saskatchewan, the average cost per patient per day of all the hospitals is $1.95. The Government makes a grant of 50 cents per person per day, which reduces the cost to the patient and means only one mill on the dollar for the entire assessable value throughout the rural municipalities.

THERE is sure to arise, somewhere, the question of the necessity of local hospitals in the well-settled districts of old Ontario where almost every village has train connection with a city at least once a day, even though the journey may extend over several hours with a wait at some junction on the way. Only the people who have lived in the country know. Take this case for instance. A farmer was taken with a violent attack of appendicitis. The doctor knew the danger of delay; he also knew the seriousness of the case and the inevitable result of trying to operate with the facilities at hand in the house! The only thing to do was to wait for a train and take the patient on a stretcher to the nearest city hospital. They got there fifteen minutes too late. If there had been a hospital somewhere in the county, ten or even twenty miles away, they could have motored there and probably arrived in time. Better still, the patient would have been more easily persuaded to go and have the operation while the trouble was in its less dangerous stages.

Another emergency which has occurred in other places happened in a farming locality twenty miles from a hospital last spring. A doctor called to a maternity case found complications which he could not handle without hospital equipment. The roads were rough and frozen, the city ambulance would not come out even if there had been time, and the only way to reach town was to drive over the frozen roads in a wagon. Through some miracle both lives were saved, but it was one chance in a thousand. A hospital in the centre of the county would not have been half the distance away and it would have had an ambulance built for country roads ready to shoot out for patients at a minute's notice.

The movement for community hospitals may suffer a lack of sympathy from the people who have a personal dread of a hospital, and this feeling is rather general in some parts of the country. Perhaps this is because we have come to regard the hospital almost as a last resort; we never knew of anyone being taken there until there was no chance of saving them at home, and "sick enough to go to the hospital" meant almost the same thing as a fatal illness. To add to the horror, the hospital was so far from home that the patient had the depression of homesickness added to his other ills. A hospital right in our midst, on the same telephone line as the home kitchen, and near enough to get in its work while it has a fighting chance, would soon live down the old prejudice. Certainly for surgical cases, accidents and other emergencies, the modern hospital with its tiled-floor operating-room, its enameled walls, its perfect lighting and heating, its equipment for sterilizing instruments and dressings, its trained staff of nurses, its system of preparation for the operation and skilful care and dressing afterward, is as much superior to the average private house as an electric range is to a camp-fire for cooking purposes.

A case worth while—Foot deformities being corrected at the Sick Children's Hospital, Toronto. Country children should have the same chance.

A movement has been set on foot by the Department of Agriculture of British Columbia, to establish, through the agency of Women's Institutes a district nursing service corresponding to a system in vogue in the Dominion of New Zealand. District nurses have been employed for some time in certain sections of the Prairie Provinces, with splendid success, and the Institutes branch of the Ontario Department of Agriculture has one Public Health Nurse working in New Ontario.

NOTWITHSTANDING the fact that most people would rather be at home when they are sick, there are cases when it isn't safe. There is the boy who was thrown under the wagon when the horses ran away, leaving him with a crushed and torn limb that only the most skilful care could save. To prevent gangrene the wound must have almost constant attention day and night. The people at home were willing and anxious enough, but they didn't understand the meaning of surgical sterility nor the danger of deviating a hair's breadth from the doctor's directions—and the boy paid the penalty. It wasn't their fault; it was the fault of the community's slowness to provide for taking care of such emergencies. Surgeons are beginning to have scruples about treating even cases of fracture without the assistance of an X-ray picture, and it would be safe to say that any community would be abundantly repaid in straighter and more useful limbs and quicker recoveries for the expense and trouble of having every case of fracture cared for in a hospital. The facilities for X-ray pictures, and for the skilful fitting of splints and bandages, the assortment of fracture-beds, fracture-rests, weights, pulleys and extension-apparatus for keeping a set limb in proper position and the nursing skill to keep the patient comfortable and well-cared for all give the hospital an advantage over any but the most expensive methods of home treatment.

Or suppose typhoid breaks out in a family where the cost of a trained nurse is prohibitive and where the district has no public health nurse. Not only is the life of the patient endangered by unskilled nursing, but the disease is likely to be carried to other members of the family. Neighbors coming in to help may take it back home with them and the epidemic is started. If the first patient could be removed to a hospital at the beginning with the care of experienced typhoid nurses a complete and normal recovery would be fairly certain, and the trouble would probably end right there.

Then there is the woman in the poor little crowded house who has so many children she doesn't know what to do. When a new baby comes—and thanks be, the country is waking up to show its appreciation in the way of Mothers' Pensions—it is impossible to maintain any degree of restfulness or quiet in the little bedroom off the kitchen, it is impossible to get capable help in the house or care for the mother and baby apart from the occasional assistance of kind-hearted neighbors, there is no nerve rest for the mother, she bears at least the responsibility of things from the hour the baby is born, she gets up too soon and both she and the child suffer for it later. Two weeks of rest and care in a hospital not far from home would mean a better start for the baby and possibly the mother's salvation from semi-invalidism for the rest of her life. If she couldn't afford to pay for it the country could.

Where medical inspection has been carried out in the rural schools of Ontario it has repeatedly been found that

Continued on page 24

The community hospital at Bowmanville.

Bowmanville Hospital, formerly a private residence, was bought by J. W. Alexander, president of the Dominion Organ & Piano Company, and presented to the town for hospital purposes. The Mayor called a public meeting of the citizens, a whirlwind subscription campaign was started and the building converted into a convenient hospital accommodation of 20 beds. It was opened in March, 1913, with a staff of a superintendent, two graduate nurses and some probationers. The probation nurses are chiefly from the surrounding country. Since the hospital was opened it has been necesary to add a new wing. Besides the general run of patients the hospital has become very popular for surgical and maternity cases. The gift of a modern and finely furnished nursery from Dr. John Hoskin, K.C., adds greatly to its attractiveness as a maternity hospital. The hospital, like others in Canada, is not self-sustaining, but is maintained in addition to fees from the patients, by Government grants, county grants, township grants and donations. The private wards and reception room have been furnished by private citizens and local societies. A Women's Hospital Auxiliary helps in the furnishing and upkeep of the institution, looking after bedding, linen, etc., and during the influenza epidemic, these women turned in and helped the hospital staff with nursing of out-patients in the community.

The Co-operative Genius of Sask. Farmers

By S. W. YATES

WHEN all the circumstances are taken into consideration the growth of the co-operative movement among the farmers of Saskatchewan during the last few years has been truly marvellous. Falling on what, at first sight, may have seemed very unfruitful soil, the seed germinated, grew, and fructified, until the movement gives promise of touching, within a very short time, the life of the farmer at every point.

Unpromising Conditions

First among the conditions which appeared to promise so little as a result of co-operative endeavor was the sparseness of the population, which inevitably tended to individualism. Then, again, there was the fact that a large proportion of the farmers were heavily loaded with debts—debts to the banks, debts to the mortgage companies, debts to the implement companies—and the further related fact of credit generally, which was carried out to such an extent that few men ever thought of paying cash for goods purchased. But, just as co-operation in Britain had its birth in the midst, and indeed as a consequence of adverse conditions, being in very truth a child of poverty, so the very conditions which seemed to give so little hope were in reality the cloud, no larger than a man's hand, which gave promise of the shower which was soon to replenish the Western earth.

First Stirring of the Dry Bones

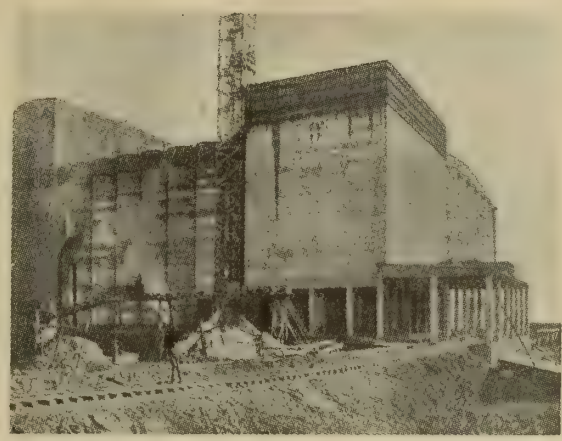
The first stirring among the dry bones of individualism took place in December, 1901, when a few Saskatchewan farmers, gored to the point of desperation by the abuses to which they were subjected by the grain and transportation interests, gathered at Indian Head to seek a way out of their difficulties. Up to that point each farmer had sought a remedy for his own adverse conditions—a mere pigmy against a giant wielding a giant's strength, with a giant's regardlessness of the consequences which might ensue to the pigmy—and this was the farmers' first real recognition of the principle of co-operation in the sense of working together for the common good. Hitherto each man had struck out for himself, often wildly and blindly, and consequently with little or no effect; but henceforth all—or at least many—were to strike for each. It was, as we have already said, the farmers' first lesson in co-operation. It taught them much, and was really the germ from which the later developments in co-operative trading sprung.

Hon. W. R. Motherwell Initiates the Movement

So far as any kind of co-operative trading was concerned the prospects remained most discouraging up to at least the year 1906. At that time, however, the Hon. W. R. Motherwell, Minister of Agriculture for the Province of Saskatchewan, made a careful survey of the situation, and established a dairy division in connection with his department, with Mr. W. A. Wilson, the present general manager of the Saskatchewan Co-operative Creameries' Association, at its head as Dairy Commissioner. The creamery industry of the province was organized on a co-operative basis, and in the year 1907 there were 213 patrons and shareholders, by whom sufficient cream was supplied to manufacture 66,246 pounds of butter, the income from the operation of the units being $16,068.96. By the year 1917, the number of patrons and shareholders had increased to 8,126, while 2,482,400 pounds of butter were manufactured, from which an income of $966,152.05 was derived.

Co-operative Creameries in Operation

In the year 1917, the Saskatchewan Co-operative Creameries. Ltd., was incorporated, the Act of Incorporation being assented to on March 10 in that year. Under this Act the company was authorized to raise capital stock to the amount of $500,000, in shares of $20.00 each. No person can hold more than fifty shares in the association, and transfer of shares is subject to the approval of the directors. In accordance with true co-operative principles each shareholder is limited to one vote irrespective of the number of shares held by him, and no proxy voting is allowed. Dividend on paid-up capital is limited to ten per cent. per annum, and patronage dividends, which are not to exceed fifty per cent. of the surplus dividend after making provision for dividend on capital, may also be paid to patrons. The remaining surplus is to be placed to Reserve Account, which may be drawn upon for trading purposes. The Provincial Government may authorize the Provincial Treasurer to loan to the company up to seventy-five per cent. of the cost of any building or plant required in the company's business at six per cent. per annum, a period of twenty years being allowed for the repayment of loans. In localities, however, which may be settled by returned soldiers, the Government may loan to the company the entire cost of any building or plant required for the establishment of a creamery, cheese factory, or any other purpose.



The top cut is the Farmers' Building at Regina, the headquarters of the S.G.G.A. The lower is the hospital elevator beside the terminal elevator at Port Arthur.

So great has been the progress of the Co-operative Creameries' Association that at the present time there are in operation twenty creameries at widely separated points in the province. During 1918, the company manufactured and marketed 2,800,000 pounds of butter and 100,000 gallons of ice cream. Ten car-loads of eggs and several cars of poultry were also graded and marketed, while 1,500,000 quarts of milk were bottled and sold and 100,000 gallons of table cream were pasteurized and distributed. The total value of these products was $1,700,000.00. During the last year a dividend of 8 per cent. was paid to all shareholders, and also a bonus of one cent per pound on all butter fat received, one cent on each dozen of eggs, a special bonus to milk shippers whose stables are modern and sanitary, and an additional bonus for herds that have passed the tuberculin test. These bonuses, which are a result of co-operative effort, amount to a total of over $30,000.

The Economic Value of the Movement

The economic value of co-operation to the individual farmer is strikingly shown by a comparison of prices received for creamery and dairy butter respectively in the months of January and June in each year. Space prevents the publication of the entire table showing the comparative results in these two months from the year 1910 onwards, but it may be stated that the gain in creamery over dairy butter has varied from five cents per pound in June, 1910 and June, 1912, to thirteen cents in January, 1910, and ten cents in January, 1914. An analysis of the table shows that butter marketed through the Co-operative Creameries' Association, owing to its purity and superior quality due to the official system of grading in force, has never sold for less than nineteen per cent. higher than the general run of dairy butter, and has reached as much as seventy-six per cent. higher. A similarly satisfactory result may also be shown in the co-operative system of marketing, grading, packing, and standardizing of all other perishable products handled by the association.

Co-operative Cold Shortage

At the time of the outbreak of the war a co-operative cold storage service was unknown either in Canada or the United States. In proportion to the quantity of perishable farm products produced in the country, Canada had fewer cold storage facilities than any other country, and of all her provinces, Saskatchewan was relatively in the worst position. During the years that the struggle continued the need was increasingly felt, and the Saskatchewan Co-operative Creameries, Ltd., responded to the demand, and took hold of the situation to such purpose that by the year 1918 there were four cold storage plants in operation, at Regina, Saskatoon, North Battleford, and Vonda, the one at Saskatoon being an exceptionally fine building.

A New Economic Force

By the establishment of a co-operative cold storage system a new principle and a new economic force, so far as Canada is concerned, has been introduced, which, in the words of Mr. L. C. Whirtz, the Secretary of the Co-operative Creameries' Association, "is not only eminently and permanently practical, but also unique in that it links up the producer, distributor, and consumer by ownership and control in a most far-reaching and democratic way"; and he adds: "There is nothing exclusive about it. It is for the benefit of all classes of the people." The value of such a system to Western Canada is incalculable, and the influence it will have in the direction of food conservation, in the steadying of prices, and in the avoidance of overloaded and depleted markets cannot be measured.

Co-operative Marketing of Grain

The next co-operative development was the establishment of the Saskatchewan Co-operative Elevator Co., Ltd., which was incorporated under the Saskatchewan Co-operative Elevator Act, assented to in March, 1911, with J. A. Maharg, Chas. A. Dunning, F. W. Green, A. G. Hawkes, James Robinson, and Dr. T. Hill as provisional directors, with power to construct, acquire, maintain, and operate grain elevators within the province of Saskatchewan, to buy and sell grain, and generally to do all things incidental to the production, storing, and marketing of grain. No definite amount was fixed as capital stock, which may be fixed from time to time by the Lieut.-Governor in Council. The capital is divided into shares of fifty dollars each. No shareholder is permitted to hold more than twenty shares, and each shareholder has one vote only, as in the case of the Co-operative Creameries' Association, irrespective of

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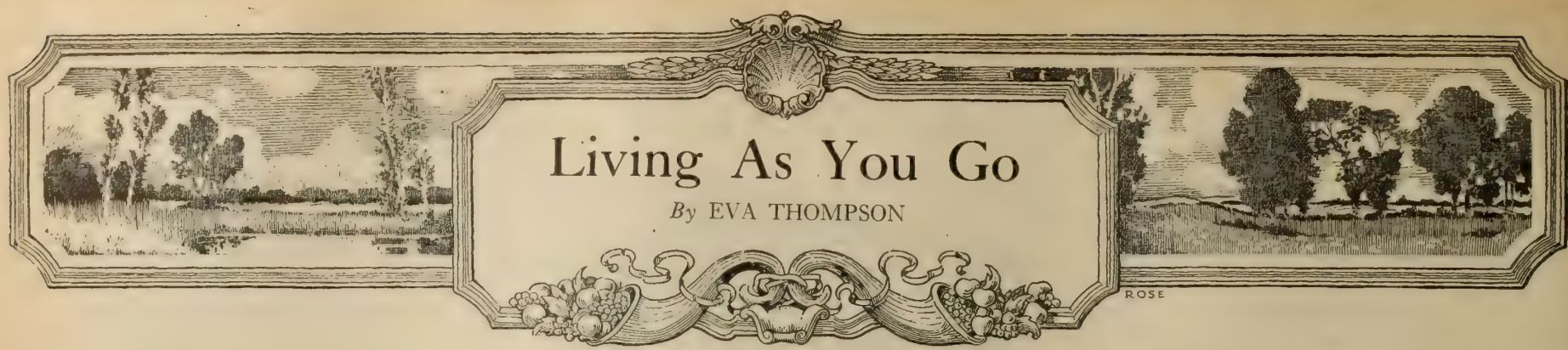
Jas. Robinson, Executive Director Sask. Co-operative Elevator Company

W. A. Wilson, General Manager Sask. Co-operative Creameries, Ltd.

At the recent S. G. G. A. A resolution asking for a fixed price on wheat for 1919 was passed. They feel that it is only economic justice.

W. C. Mills, Secretary Sask. Co-operative Elevator Company



Living As You Go

By EVA THOMPSON

ALL young countries seem to have to go through the glass bead and bright color stage. One part of their life after another it attacks, but fortunately all so far have recovered. In Canada the symptoms were first noticed in dress. In the very early days dress was plain colored, all wool and a yard wide. Later colors became more plentiful, wondrous ways and means of dressing cropped up and oh, what wonders those first costumes were! A simple little church or street costume took at least fifteen yards of stiffest, most beflowered silk. It was shirred, then tucked, then ruffled, then beaded, then feather-stitched. It was lined and interlined with stiff paper, padded and puffed, and looped up to show the lining. Lace was put in the sleeves and at the neck, and it was buttoned with fancy jet buttons. The skirt was draped and trained to be held off the ground in more or less graceful manner. All hats were decidedly trimmed and all had to possess at least feathers, flowers, ribbon, buckles and a few pins. The ladies who wore them years ago if they were here now would be wearing a navy blue tailor-made suit, brightened up perhaps with brown boots and fox furs, or else walking in our smartest thoroughfares in ginghams, in broad daylight too.

Next, glass-bead attacked the big square plain houses and they broke out with scroll-work, bay windows, colored glass, and dinky little verandas, while, inside, the fire-places were papered over, the arches developed curious and weird spindles and rope curtains. The solid hand-made oak or walnut furniture was given to the deserving poor or hidden away in the attic, what-nots developed and carved, puffed, flowered parlor suites, veneered, shiny furniture with glued-on ornaments. These too have been slowly passing away. Now collectors run to and fro over the land trying to buy back their old despised walnut cupboards. The verandas are growing into wide useful porches, the fireplaces reappear with pride, mission style is smoothing over the veneer and ornaments, while parlors become living-rooms. Even a spinning-wheel has a place of honor as an heirloom.

But the worst outbreak is here now, and is affecting farm life in general all over Canada. It causes its victims to believe that a farm is some place on which to make enough money to move away from. They feel they can't have a good time anywhere but in the city, with a lot of money. It is not necessary to improve or beautify a farm home, only just to keep the ground in good condition to grow crops. They would never plant or save a wood lot just for strangers to use.

SO they cut down all the trees and built big, comfortable cattle barns with running water, feed carriers, milking machines, silos, etc., so they can care for a greater number of cattle and sell more, while they live in a little, cold, comfortless house. "Oh, well," they say, "we aren't going to spend all our lives here slaving! Just as soon as we get enough money we are going to move to town and then we'll have a comfortable home and have time to enjoy it."

Then they go on day after day getting up at daylight, hurrying with breakfast, hurrying with the chores, hurrying to get so much done by dinner time, hurrying with the dinner, then hurrying back to work, with chores again till they are almost too tired to eat supper. Afterwards they perhaps pick up the paper, read the head-lines and drop off to sleep. They waken, take off their boots and stumble up to bed so they can get up early in the morning. They never really straighten their backs day after day. There is always work to do on a farm on Sunday as well as any other day. There is no time for church, too many chores. There are no holidays, for who would milk? After years and years of bent backs they refuse to straighten up—it's easier to keep them bent. The place must be paid for, the children sent to college, for they are never going to work like their father has done. Besides they don't want to. They would much rather work the short school hours, wear clean clothes, live in a pleasant room, have jolly fun and lots of company and amusement.

After the family is all settled, if the farm hasn't too tight a hold on its so-called owners, they sell it for a handsome price and at last after fifty years of work they begin to enjoy some of it, or at least they try to enjoy it. Their taste for fun is gone by this time, they don't want to have a good time, they only want to rest. The family is all gone, so of what use is a big house? It only makes work. Their eyes and brains are dulled, so what use can they make of leisure time? Books have too fine a print. Fingers are too stiff for music and ears too dull. The body is too worn out to enjoy travelling, the eyes are too dim to see beauty. They have been too busy to keep track of old friends. New ones are never the same. The days seem all so long. They have made a beautiful cake, all iced, and with seventy or eighty candles on it, but they don't want to eat it.

I HOPE I live to see farmers farm as my great uncle did, just because he wanted to, and to make a comfortable living. He came out from Ireland and cleared a bush farm. It was *his* farm. He cut the first tree, cleared the first field, fenced the whole place with rails he had split, built the first barn and house and loved every bit of it. He worked hard and enjoyed what he had worked for. He never thought it drudgery or the farm a mere money plant. It was the best farm in Colchester and a beautiful place, second only to an estate in Ireland. He would just like anyone to show him a finer wood lot, pasture, field or tree than he had.

He lived as I remember in a big, square, white house with a glass-bordered big front door. Everything inside and out was large, square, light and plain. He had built all the cupboards himself and could remember the trees he cut them from. The day he made that picture frame was the day of the big wind. Every piece of furniture had a story. The house looks overly large now but at that time there were seven boys and three girls, besides always an old uncle, aunt or cousin there, so it never seemed too large then. They all did a lot of work, but never too much. They worked to make a comfortable living and always had it and a happy time along with it.

Neighbors were neighbors in those days, the best friends on earth. They shared their troubles. If any person was sick his neglected work was the least of his troubles, and the neighbors all called every day carrying something covered up with a white cloth. No man would ever be seen working in the field on a neighbor's funeral day. If on the other hand it was an occasion for rejoicing everybody came and danced. The evenings were full of neighborliness. Old and young skated, danced, talked or sang. Everybody sang in those days. No one would at least acknowledge that he couldn't sing, it was as bad as saying you couldn't talk. Each family took its turn during the sleighing season in taking a sleigh load out every moonlight night, just to hear how pretty their old brass bells sounded.

Besides their troubles and joys they shared together the fruits of the earth. Nobody sold apples and pears, therefore nobody had to buy. When you killed a pig you gave your neighbor a piece; when they killed they gave it back to you. No one was any the poorer. Yet both felt the blessing of having given something.

POOR Old Uncle, he never had an automobile, but he did have two little white horses and my, couldn't they trot! He never wanted to go any place where they couldn't take him. He never had a daily paper or a mail box. But once a week the mail came into the village and that day he went the four miles to the post office, rain or shine, to get the Montreal *News*, and about once a year a wonderful letter from Ireland, written across and then up and down to save paper postage. It took about a day to read it. The newspaper was the only one in the neighborhood. That evening all the men came in to hear the news read and thoroughly discussed. They knew far more about their world's news than we do of our times. After being read the papers were all put carefully away in a file in case of future political arguments.

He never heard a Victrola or any of the great operas. But he had heard the hired man coming across the meadow and up the lane early in the morning playing his flute. He had heard a born violinist play with his eyes shut, "Ye Banks and Braes o' Bonny Doon," on the porch of an evening. He had heard a tenor and alto voice come slowly up the road singing, "It came upon the midnight clear," when there wasn't another sound on a clear, frosty night but the stir of two big copper sleigh bells. He had heard the old Scotch piper play "Scots Wha Hae," so he never missed much of real music.

No matter how busy the week had been Sunday was another day and everybody in the family went to church whether they wanted to or not. "They would come by no harm in going." The old church was in those days always filled to the doors. If any family pew was empty the cause was a serious one. The mere fact that they lived five, six, or seven miles away was not thought any excuse at all. Afterwards everybody went home with someone else to the leisurely Sunday afternoon dinner and discussed the text and sermon. It was never criticized, no one would be so rude as to criticize such a learned man and gentleman as the Rector.

They were never too busy for company. In fact, I think they just worked to get done before they went somewhere, or before somebody came. On particularly nice mornings Uncle would say to Aunt Elizabeth, "Lovely morn, I wouldn't be surprised if some of the cousins came over to-day." Generally they drove in about ten-thirty, whole bus load of them, yelling up the lane. All the old roosters then ran and hid under the barn, leaving the young, foolish ones to their fate. If there were children the old cat hid up in the high hay mow. For everybody was out for fun that day and part of the program always was to dress up Barney in the baby's dresses, in spite of his savage growls, if they could catch him unawares. The boys generally stuck to

Continued on page 17

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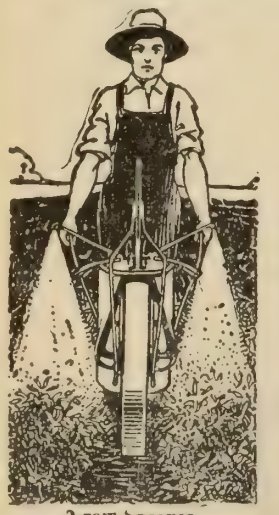

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Protecting the Farm from Fire

By E. I. FARRINGTON

EVERY year fire robs this country of many millions. A very large part of this loss comes in rural districts where there is no fire protection and where the destruction of property is likely to be total. In times like these when every effort is being made to reconstruct a war-wearied world, this immense loss is most deplorable. It is all the more to be regretted because a very large proportion of the fires in rural districts, as well as those in the towns, might be prevented. It is true that lightning takes a high toll, but even its savage attacks can be frustrated to a considerable extent by the use of lightning rods. Unfortunately lightning rod protection has fallen somewhat into disrepute because of improper installation, fake dealers, and the neglect of the rods after they have been attached.

Eliminating the danger from lightning, however, carelessness is the most prolific cause of rural fires. Parlor matches are responsible for innumerable fires in the country, particularly in stables. It is the common practice of many farmers and foremen to carry matches loose in their pockets, especially if they are smokers. A few invariably break a match between their fingers before throwing it away, thereby making sure that it is put out. Even these men, however, are likely to use a match when they want to illuminate a dark corner or investigate the contents of a closet, often with disastrous results. If every farmer would carry a small electric flash light in his pocket instead of matches, he would help to reduce the country's fire loss by many thousand dollars. It is wise, for that matter, to substitute electric lanterns for oil lanterns when working in the barn. Fires by the score can be traced to lanterns overturned by the kick of a cow. Electric lanterns cost a little more to maintain than oil lanterns, but are much safer. An oil lantern is dangerous even if it suffers no accident, when it is not properly cared for. The same statement applies to oil lamps. In one year two hundred fires in the state of Illinois alone resulted from carelessness in the use of kerosene for lighting purposes.

Keep Oil Lamps Clean

NO oil lamp is safe unless it is kept clean. In some farm homes the lamp is allowed to burn at night, but this is a poor practice, because the lamp may get so hot that it will explode, especially if the oil is allowed to burn low. The gas which forms in the oil font is very highly explosive. Some women have the habit of filling a lamp while it is burning, but this is to invite disaster.

Probably it isn't necessary to say anything about the danger of using kerosene when starting a fire. Many a farmer's wife will tell you that it is necessary to use kerosene when the wood is not dry. It isn't necessary, though, to pour kerosene into the stove. If the wood is saturated before it is put into the fire box, the danger will be greatly lessened.

Many fires are the result of poorly built chimneys. If the rafters come into close contact with the bricks or project into the flues as they are sometimes allowed to do, they will almost certainly catch fire sooner or later. Not infrequently the mortar comes out from between the bricks, especially when wood is burned constantly, allowing the bricks themselves to fall out. In old farm houses the chimneys usually were well built, but they were often constructed with sloping flues. The older the house the greater the danger that some of the bricks in these flues will drop out. Any chimney which has been idle for a long time should be carefully examined before it is used.

Of course the use of wood is general in the country, and wood commonly ignites the shingles. In fact in one year in the state of Illinois 1,145 fires were caused by sparks on roofs, and these fires destroyed $643,800 worth of property. It is possible to put a screen over the chimney which will confine the sparks, and it is advisable to use asbestos shingles or some other fire-resisting material when the roof must be reshingled.

Wood makes much more soot than hard coal, and chimney fires are a not infrequent result. There is much to be said in favor of cleaning the chimneys whenever the work can be done. A simple plan is to attach a rough piece of iron to a cord, lowering it from the top and working it up and down against the sides to dislodge the soot, so that it will fall to the bottom of the flue where it can be removed. Every chimney should extend to the bottom of the cellar, and have an opening through which soot can be taken out.

Not infrequently stove pipes are carried through partitions without the use of tin or asbestos to protect the woodwork. This is a dangerous practice, of course. If a furnace in the cellar should come close to the beams, the latter should be covered with asbestos.

Spontaneous Combustion

ALMOST as many fires are ascribed to spontaneous combustion as to rats and matches. A careful investigation is likely to reveal the fact that a clothes closet somewhere in the house has been allowed to accumulate a large collection of rags, waste paper, and other rubbish. Dust and lint are highly inflammable. Much danger also lurks in oily mops and rags which have been used for polishing furniture and floors. These rags should either be burned or kept in metal receptacles. They are particularly liable to spontaneous combustion if thrown into a closet. Rubbish is always a menace, whatever its character. It should be kept out of the cellar and attic as well as out of closets. Most spontaneous combustion fires start in one of these three places.

Rats do cause fires, but more often from eating the covering off of electric wires than from nibbling matches. The combination of children and matches, however, is a dangerous one. If matches were always kept in a metal box with a metal cover, there would be fewer fires.

The Automobile

WITH the coming of the automobile, a new fire hazard has appeared. The owners of country homes commonly keep their machines in the stable, no attempt having been made to make the building fire-proof. Usually no harm will follow if proper precautions are observed. It is not only unwise but positively reckless to smoke in any barn, but especially in one where an automobile is stored. Greasy harnesses should be kept in a separate apartment. It is very important to keep a door or window open when the engine is running. The gas from the exhaust is exceedingly poisonous, and fatalities are frequently reported as a result of running the engine in a closed building.

In spite of precautions, an occasional fire is certain to occur. For that reason, every country home ought to be equipped with fire fighting facilities. Running water is, of course, a great advantage. With a fairly high pressure and with plenty of hose available, fires can often be extinguished in their incipiency. It is well to have all the cold water faucets in the house threaded so that a hose can be attached at a moment's notice. Running water may be supplied by several means, but the compressed air system, with a tank in the cellar or buried in the ground outside, is especially efficient. Oftentimes sufficient force is obtained to carry a stream of water to the top of the house.

WATER, though, should not be depended upon entirely for meeting emergencies. Every country home, whatever its size, should be equipped

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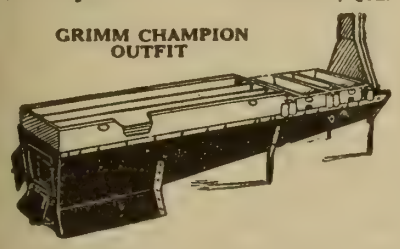

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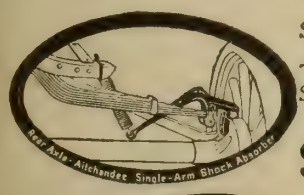

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with one or more chemical extinguishers. The cost is not excessive and the feeling of confidence inspired by the presence of even one extinguisher is worth the price of the device. There really ought to be an extinguisher on each floor of the house in a central location, and one or two more in the barn. Those which use a liquid are far preferable to the kinds containing powder, although the latter are not without value. A good chemical extinguisher should throw a stream fifty feet. Some kinds work automatically when they are inverted, while others have a simple hand pump. The latter are small and easily handled, even by a woman. The stream in all cases is thrown directly into the flame at its base, creating gas which smothers the blaze.

Country estates of considerable size need a chemical apparatus mounted on wheels so that it can be moved about with ease. An occasional drill, making use of the servants, will help to prevent any serious fire. These mounted extinguishers have large sized tanks and throw a very powerful stream, making them exceedingly efficient.

IF a fire is discovered inside the house, and there is neither hose nor extinguisher to fight it with, a wet broom should be substituted. Really surprising results in putting out a fire can be obtained by the vigorous use of a broom which is frequently dipped in water. There is no more efficient implement to use, also, when fighting a grass fire that threatens the buildings.

When the chimney gets on fire, there is no need of becoming panic-stricken. Oftentimes it will burn itself out without damage, but it can be extinguished usually by the use of salt or sulphur, or by pouring buckets of sand down the chimney top. If there is a fireplace connected with the flue, a wet blanket should be hung over it.

Occasionally an oil stove gets afire, although this is not likely to happen if the stove has been kept clean, unless it is an old one. The first impulse of the housekeeper is to get the stove out of doors, but if this is attempted, serious results are likely to follow. There is a safer as well as more efficient method of dealing with the danger. *Throw a pail of flour into the blaze.* It will be quickly smothered out. A shovelful of sand or even earth may be used in place of the flour.

Too much emphasis cannot be placed upon the necessity of reducing the present appalling losses from fire in the country districts. During the last year some of the many rural fires have had a very suspicious character. It may be that the work of alien enemies is not confined wholly to the towns. There is need of increased watchfulness and added precautions. Every fire makes a drain upon the resources of the country because the material burned must be replaced. With over a thousand fires and a property loss of $800,000 in one state during twelve months—due to indifference in the care of the heating apparatus, there is evident need of reform. Gasolene and kerosene are used with a recklessness that is almost incredible, but which is realized only when property losses as well as fatal accidents are considered. Every woman who lives in a country home can play at least a small part in husbanding the nation's resources, by giving greater care to her lamps and her oil stoves.

CANADIAN GROWN ROOT SEEDS BY SEED DEPARTMENT

With the decline in quality of trade stocks and the threatened seed shortage, the growing of field root seeds in Canada became a national necessity. Dominion and Provincial farms and stations were appealed to by the Seed commissioner with the approval of the Minister of Agriculture, and the Experimental Farms Branch field root specialists produced last season over 70,000 lbs. of improved seed grown from selected stock of only the best varieties. This superior seed is of the highest vitality, and being grown under our own conditions of soil and climate, should prove of great value to Canadian farmers.

SAVE

~~$10.00~~ TO ~~$15.00~~
$20.00 TO $30.00
per cow per year with a

DE LAVAL
CREAM SEPARATOR

Formerly, with butter-fat at 25 to 35 cents a pound, a De Laval Cream Separator saved $10 to $15 per cow per year over gravity skimming.

Now with butter-fat selling at 50 to 65 cents a pound, and even higher, the saving with a De Laval is doubled.

If you have only two cows and are selling cream or making butter, a De Laval will soon save enough to pay for itself.

With butter-fat at present prices you need a De Laval more than ever before, and if you already have an inferior or half-worn-out separator, your cream loss with such a machine is too big to be neglected.

The best cream separator you can get is the only machine you can afford to use these days, and creamerymen, dairy authorities and the 2,325,000 De Laval users all agree that the De Laval is the world's greatest cream saver. They know from experience that the De Laval skims the closest, lasts the longest and gives the best service.

Order your De Laval now and let it begin saving cream for you right away. See the local De Laval agent, or, if you don't know him write to the nearest De Laval office as below.

The De Laval Company, Limited

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.

MONTREAL, PETERBORO, WINNIPEG, VANCOUVER
OVER 2,325,000 DE LAVALS IN DAILY USE

The same care and skill is used in milling PURITY OATS as in our more famous product

PURITY OATS MAKES Better Porridge

Canada Food Board License Nos. Cereal 2-009 Flour 15, 16, 17, 18

PURITY FLOUR
(Government Standard)

"MORE BREAD AND BETTER BREAD AND BETTER PASTRY"

Western Canada Flour Mills Co. Limited
55 HEAD OFFICE—TORONTO, ONTARIO

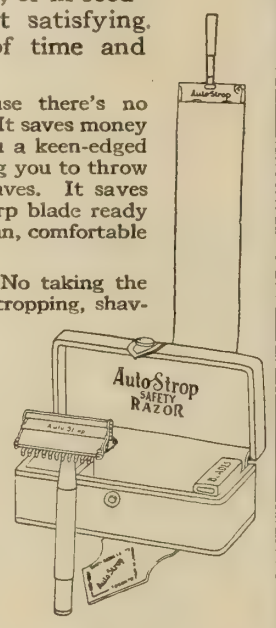
The progressive farmer naturally prefers an AutoStrop Razor

He prefers it for the same reason he chooses the latest idea in tractors, in separators, or in seeding, because it gives him the most satisfying results with a distinct economy of time and money and effort.

The AutoStrop Razor saves time because there's no fumbling with parts; it's all in one piece. It saves money because its self-stropping feature gives you a keen-edged blade for every shave, instead of compelling you to throw away a blade after only three or four shaves. It saves effort because since there is always a sharp blade ready for use—it enables you to get a close, clean, comfortable shave with the least number of strokes.

To clean, simply dip the razor in water. No taking the razor to pieces and assembling it again. Stropping, shaving and cleaning are all done without removing the blade from the razor.

An AutoStrop Razor complete with strop and 12 blades sells at $5; but the dealer will hand you back your money without argument, if the AutoStrop Razor doesn't give you the coolest and cleanest shave you ever had from any razor.



AUTOSTROP SAFETY RAZOR CO., Limited
AutoStrop Building, Toronto, Canada

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Auto Strop Safety Razor

A Vast New Land Waiting For You

Settle in Northern Ontario

Opportunity awaits the man who will strike out to the rich, fertile land of Northern Ontario. Millions of acres of vigin soil obtainable at 50c an acre in some districts, and in others Free, are calling for cultivation. This land contains immense resources in timber, mineral, waterpower, fish, game and scenery, and is one of the greatest expanses of fertile territory in the world. This land calls for men to cultivate it; in return it will give health, comfort and prosperity. Thousands of farmers have responded to the call. How about you?

For full information as to terms, regulations and settlers' rates, write to

H. A. MACDONELL, - Director of Colonization

G. H. FERGUSON
Minister of Lands, Forests and Mines

Parliament Buildings
TORONTO, ONT.

We Want to Demonstrate on Your Farm

We will send a Gilson Engine, any size, without charge, to any responsible farmer in Canada to try out on his own farm, at his own work.

Write for further particulars of free trial offer, catalogue, and special introductory prices.

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Leaks and Holes in Kitchen Utensils, Graniteware, Aluminum, Enamelledware, Tinware, etc., quickly repaired. Easy to use just like putty. Hardens in two minutes. Each mend only ½c. 15 cts. package. At your dealer or postpaid by Vol-Peek Mfg. Co., P. O. Box 2024, Montreal, Can.
Agents Wanted.

Poultry Leg Bands, Ear Tags and Buttons

FOR STOCK *Retail Prices*

Challenge adjustable Leg Bands	15c per doz	85c per 100
Single spiral colored bands	20c per doz	90c per 100
Three spiral colored bands	25c per doz.	$1.25 per 100

Cattle Ear Tags and Buttons, prices according to amount of printing required. Catalogue Free

H. E. ROSS — THE RIDEAU SPECIALTY CO. MANUFACTURERS SMITHS FALLS ONT.

As Women's Institutes are Thinking

Resolutions Passed at the Ontario Convention

Mrs. Patterson, of Gadshill, and Mrs. Todd, of Orillia, who were appointed to represent the Ontario Institutes at the National Convention in Winnipeg.

AFTER dealing with resolutions coming from members and branch institutes all over the province, the following resolutions were passed:

1. That a petition for free homes for the insane and adequate provision for the insane and feeble-minded be forwardded to Dr. Hincks, the Provincial Secretary.
2. That a protest against the importation of poppy-seed into Canada be sent to the Horticultural Societies.
3. That the federal Government be asked to consider carefully whether the advantages of the daylight saving measure outweigh its disadvantages, and if so, that the act be amended to make it more acceptable to the rural people.
4. Endorsing the South Lanark resolution condemning the Senate for vetoing the bill for amendment of the criminal laws as passed by the Commons and hoping that in the light of further consideration these amendments will be passed at another session.
5. That a woman be appointed on the Board of Censors for moving picture films and that a Dominion Board of Censors standardize these pictures.
6. That lectures on Laws Relating to Women and Children and on Citizenship be included in the programmes for the summer series of meetings.
7. That the following plan of provincial organization be adopted as a temporary measure, the seventeen representatives from the Institute districts having power to add to their numbers, and these representatives to form a committee of directors:

No. of District.	Counties in District.	No. of Branches.	Representatives
Eastern District—			
1	Dundas, Glengarry, Prescott, Stormont...	21	Mrs. J. P. McNaughton, Maxville
2	Carleton, Lanark, Renfrew	44	Mrs. Jas. Reid, Renfrew
3	Addington, Amherst Is., Brockville, Frontenac, Grenville, Leeds South, Leeds North and Gren., Lennox	32	Miss M. E. Pearson, Merrickville
		97	
Central District—			
4	Hastings, North'd., Prince Edward	62	Mrs. W. R. Munro, Demorestville
5	Durham, Haliburton, Peterborough, Victoria	55	Miss E. E. Haycraft, Bowmanville
6	Ontario, York	55	Miss Kate McKay, Brechin
7	Dufferin, Grey	62	Mrs. Jas. Gardner, Owen Sound
8	Halton, Peel	56	Miss H. Beardmore, Port Credit
9	Haldimand, Lincoln, Welland, Wentworth, Wellington	77	Mrs. L. C. Burns, Caledonia
10	Brant, Norfolk, Oxford, Waterloo	73	Miss E. D. Watson, Ayr
11	Muskoka, Simcoe	73	Mrs. Wm. Todd, Orillia
12	Parry Sound, Timiskaming	43	Mrs. Jno. Clark, Englehart
13	Nipissing, St. Jos. Is., Algoma, Manitoulin	44	Mrs. Geo. J. Priddle, Silverwater
14	Kenora, Rainy River, Thunder Bay	34	Mrs. B. O. Allen, Port Arthur
		534	
Western District—			
15	Bruce, Huron, Perth, Union	59	Mrs. J. Patterson, Gadshill
16	Lambton, Middlesex	56	Mrs. J. G. Dawes, Thedford
17	Elgin, Essex, Kent	53	Dr. A. Backus, Aylmer
		168	
	Total number of branches, Girls' Institutes or Junior Women's Institutes	19	
		919	

The seventeen members then withdrew and appointed the following officers:

President, Mrs. Wm. Todd, Orillia; Vice-Presidents, Mrs. Jas. Reid and Mrs. J. Patterson; Secretary, Mrs. B. O. Allen; Executive Committee, Miss M. E. Pearson, Dr. Annie Backus, Miss H. Beardmore, Miss Kate McKay, and Mrs. Jno. Clark; Mr. Geo. Putnam, the Superintendent of Women's Institues, was made honorary president.

8. That the branches be advised to bring matters of official interest to their annual meetings and from there send in their suggestions, recommendations or resolutions for the agenda of the convention and have some person appointed to open the discussion.
9. That in the interest of sanitary and moral improvement of our schools, two women be appointed on the public school boards in addition to the three men trustees.
10. That the Government institute a system of allowances to needy mothers.
11. That the Institutes record their appreciation of the work of the late Susie Campbell.
12. That the convention send greetings to the Women's Institutes of England through their representative, Miss Guest.
13. That the Government be asked for an additional grant, a committee from the Institutes formulating a definite basis.
14. That home nursing be included in the public school curriculum and that Model and Normal students be given special training in this subject.
15. That the resolution from Thunder Bay district, petitioning the Premier and the Minister of Agriculture for the appointment of a woman representative for that district to act in the capacity of the district representative of the Department of Agriculture be adopted.
16. That, appreciating the able leadership of the Superintendent, Mr. Putnam, the Government be petitioned to make such increase in his salary as shall assure the Institutes of his continued leadership.

The committee nominated as delegates to the National Convention of Women's Institutes and similar organizations to meet in Winnipeg: Mrs. Wm. Todd of Orillia, and Mrs. Jas. Patterson of Gadshill, with Mrs. B. O. Allan of Port Arthur as an alternative representative.

Medical Inspection and Women Trustees

Announcement Made by Dr. Cody at the Ontario Women's Institute Convention

WE feel the importance of the health of our boys and girls so much that we have in hand and are providing the necessary finances for making a complete survey of the rural and smaller town and village schools of the Province by a corps of medical inspectors and nurses appointed and paid by the Department of Education in conjunction with the Women's Institutes Branch of the Department of Agriculture. That is to say we are making a partnership through Mr. Putnam with you, because we know there are no better partners to be had. And if "Barkus is willing" we are prepared to go forward. So that the Department of Education, in co-operation with the Women's Institutes are prepared this year to make this survey of the rural town and village schools. It is expected that this work will begin in the month of March and will continue until a complete survey has been effected. The objects of this survey are twofold: First of all, to get a complete statement of the facts from competent authorities; and in the second place, to encourage local school boards to secure the services of School Medical Health Officers and Nurses, as provided for in the Statutes and Regulations.

We believe that the people in the Province of Ontario are just as much interested in caring for their boys and girls as they are for caring for Holstein cattle and for improving breeds of horses and hogs. On your behalf I would venture to resent the implied insult hurled at the people in the country by some who ought to know a great deal better. You want the best for your boys and girls, and I consider it nothing short of an insult to say that the people in the country do not care a button about the health of their children. All that is necessary is a survey and the bringing of the matter fairly and correctly and adequately before the people and I am perfectly sure that in the course of a year or two we shall find adequate medical and dental inspection secured for all parts of our Province so far as its school population is concerned.

The plan provides for one week's inspection work. The details will be worked out between Dr. Waugh and Mr. Putnam. We propose about a week's inspection work and the services of nurses for about two weeks in each of the 105 Women's Institute districts in the Province. The Institute districts correspond with the electoral districts in most counties and this plan will in a single year reach more than one-third of all the rural schools of the Province. We shall continue the work until the whole is covered, but it may not be necessary to continue that work because I am sure that the inspiration and example and the knowledge that will be passed on by this survey will speedily lead to every school body undertaking this work itself.

Women as School Trustees

There is another point I would like to emphasize, it is an administrative point. You ladies throughout the Province have already entered the field of education as school trustees. In most of our cities ladies have become members of the Board of Education, I think during the past year there has been a marked increase in the number of ladies who have been elected as school trustees. I venture to say that one place where your services would be of an incalculable value would be in school sections in rural districts. I am sure that in any school section where there are three trustees if one or two of them were ladies we should have great things done in that section. I believe that some aspects of the care of children that a man is apt to overlook would be dealt with, and dealt with promptly and effectively. You know, under the Statute as it now stands, if a woman is a ratepayer, if she is on the assessment roll in her own right as a public school supporter she may be elected to the school board, but that does not touch, for the most part, conditions in the rural sections and therefore I would like to make the announcement to you tonight, and I am authorized to make it by the Prime Minister: that *a bill is prepared that bears the title "An Act to Render Farmers' Wives and Daughters Eligible as Members of School Boards."* Under this act, not only may a woman who has property and consequently has her name on the assessment roll be elected; but the wife or daughter of a farmer, assessed as an owner and actually an occupant or tenant of a farm provided such wife or daughter resides on the farm with her father or her husband, may also be eligible to election as a school trustee. The act confers, further, on farmers' sons the right to be elected as school trustees. Everybody will admit that it would be going too far to allow a farmer's daughter to be elected school trustee and to shut out the farmer's son.

LIVING AS YOU GO

Continued from page 12

their work till noon if the field was far enough away. After dinner nobody worked except at entertaining the visitors. The crops in spite of this neglect always grew and were always harvested. The stock always had plenty of feed to make them sleek and the cupboard was never bare.

WHEN Uncle got too old for farm work he didn't leave the farm. He stayed there all the closer. The boys all liked to farm and the whole seven would have stayed there if he had needed them. There were still lots of things he could do that he liked to do to keep busy. He fed the chickens, hoed in the garden, trimmed the roses, scythed the lawn, took the cows back and forth to pasture, and salted them every Sunday afternoon. And he kept the wood-lot like a park. He particularly loved that part of his farm and could always bring in from it the first flowers and mushrooms which nobody else could find. In the winter he made parks and split wood. He dearly loved to split wood—he could do it so well. Just a twist of his wrist at the right moment and the stick was split. Then he would take it into the house and put it on the fire to tell us stories by—about the bear he killed with that old gun over the door, the hunts after deer, the time the wolves came and howled at night in the yard, the Indians who came up the lake, Southern war stories, and about old Ireland and the sea.

He died one day, sitting on the big stone at the head of the lane, looking across to the woods with the same expression on his face as he used to have when John would be coming across the meadow with his flute in the mornings.

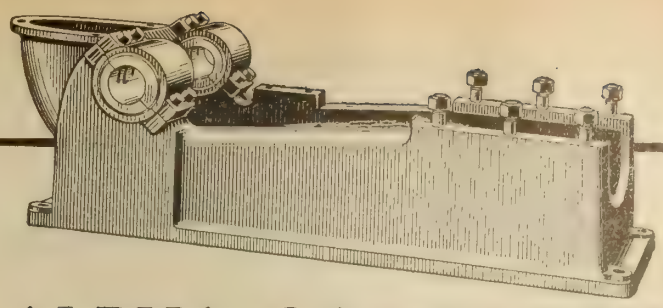
MERID, SASK., FEB. 7, 1919.

I WANT *to thank you for the splendid article on the Home Library in last month's* FARMERS'. *I am keeping the number (I keep all the* FARMERS') *especially for a help in choosing my books.*

The articles on Child-welfare, and their management, are very much appreciated. I wish you could give us one on the importance of keeping the children in first place in our home making. I find that I very, very often allow my concern for something about my house to interfere with the time I should devote to my bairns, and I'm afraid I often do not answer their numberless questions at all serenely and satisfactorily.

I did not mean to take up so much time but somehow writing to the FARMERS' *has much a comfortable feeling—just like writing to a very well-known and entirely dependable friend of the family. So please excuse.*

Yours truly,
(MRS.) PERCY WINTER.



ALPHA GAS ENGINE
has angle bearings

This is the bed of the Alpha Gas Engine, showing how the main bearings are angled.

You can leave the caps off and still run the Alpha—because the thrust of the piston is on the frame itself, *not* on the caps or the bolts. The bearings don't need to be over-tight, and as they are made of highest grade babbitt they will last for years.

Every other detail is worked out with the same care to make the Alpha reliable, easy to start and hard to get out of order.

Send today to nearest office for *Gas Engine Book* and learn how a first-class engine is made—you'll enjoy reading it.

The De Laval Company, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

100% SANITARY

Germs flourish in the seams and joints of ordinary milk-pails. No matter how carefully you scald and cleanse, you never can be quite *sure* that some crevice does not harbor a colony which will make trouble later on.

EDDY'S INDURATED FIBREWARE MILK PAILS

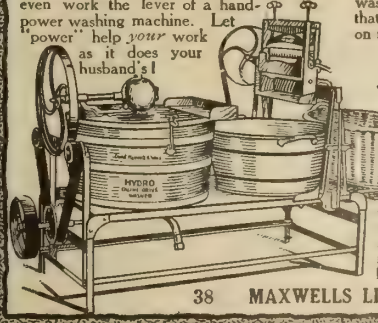
are 100 per cent sanitary, because there are no joints or seams to cleanse. They are made in one piece, from wood pulp, under tremendous hydraulic pressure. The hard, glazed surface is baked on at high temperature, and is absolutely impervious to liquids. Eddy's Milk Pails are practically indestructible. They cannot be dented and no cracks can develop on the surface. Rust cannot attack them and no ordinary accident will do them injury. They cost no more than ordinary milk pails. They will save you labor *now*, and in the long run they will save you money.

The E. B. EDDY CO. Limited
HULL, Canada
Makers of the Famous Eddy Matches

B 4

Just Put Clothes In—the Washer Does the Work

If you have a gasoline engine—if you have electric power—then no longer need you even work the lever of a hand-power washing machine. Let "power" help *your* work as it does your husband's!



Of course you realize that a washing machine, even run by hand, is quicker, easier, better than washing by muscle-power. But here's a washer that does everything—all you have to do is "turn on the juice."

Maxwell

Power Bench Washer

will do the washing while you do other work! No need to watch it—it can't go wrong. It will do the wringing too. Easy to operate—simple and strong in construction—perfect in mechanism. Made in one-, two-, or three-tub size; operated equally well by 1-6 h.p. electric motor, or any gasoline engine. Write us to-day for full particulars—it will be time well-spent.

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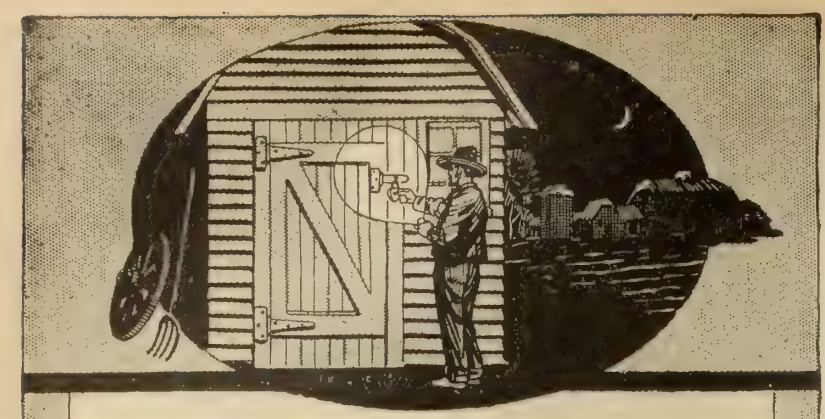


LIGHT—WHEREVER NEEDED

Carry it with you—a Reliable Flashlight. Use it indoors and out—wherever darkness makes seeing and working difficult.

You can direct the brilliant rays of the Reliable Searchlight with bulls-eye accuracy. You release a flood of bright light as quickly as pulling a gun trigger. No danger of explosion—no possibility of extinguishing by wind or rain. There are a thousand uses for Reliable Searchlights inside the house and out—in barn, garage and other outbuildings—**any place.**

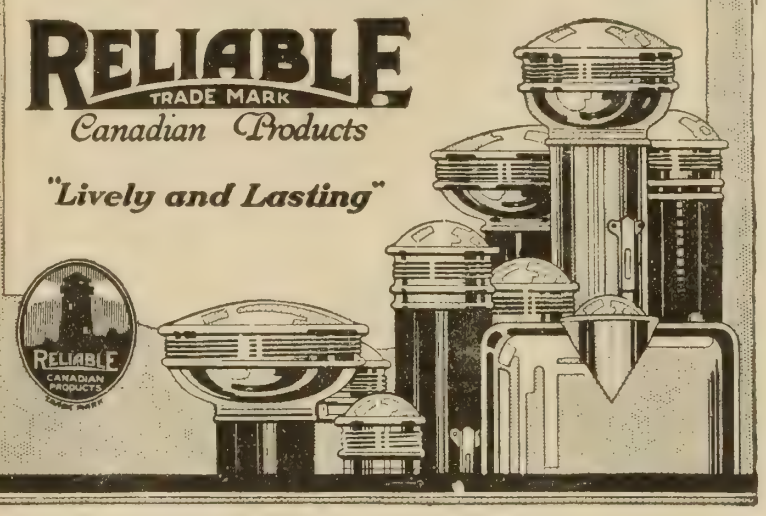
Reliable Tubular Searchlights are made of metal enameled in red, brown, blue and green—also fibre and metal flashlights in all standard sizes and styles.

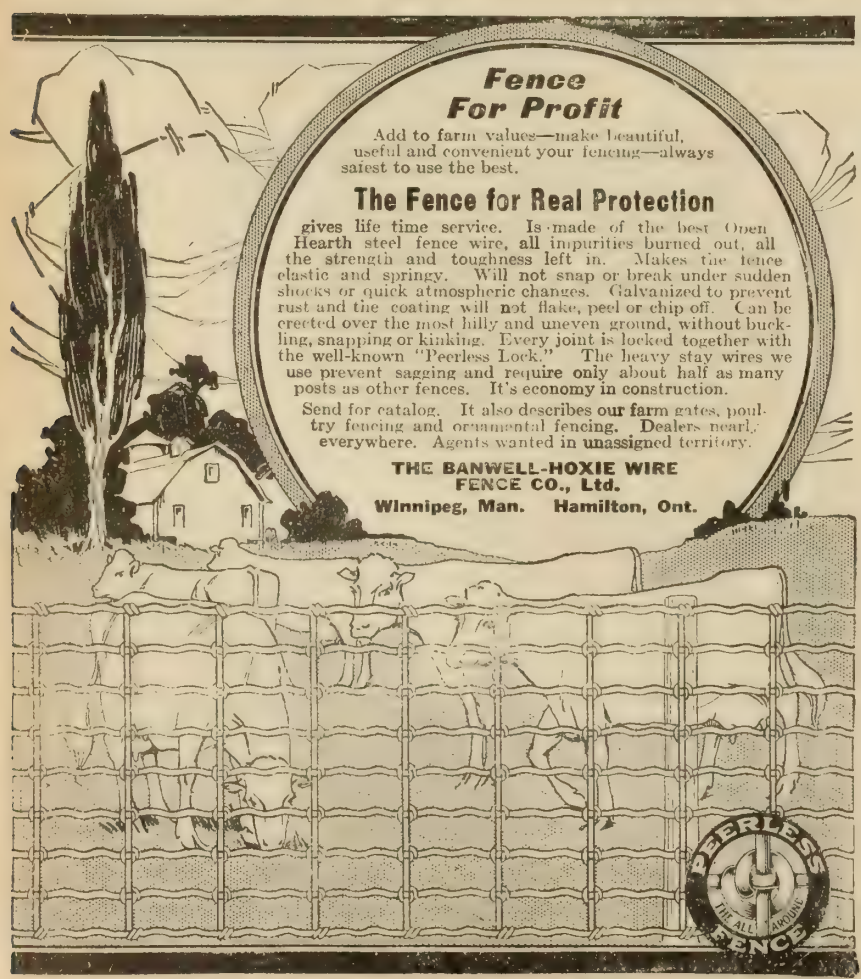
We manufacture a complete line of "Lively and Lasting" Reliable Dry Batteries for household uses, gas engines, automobiles, trucks and motor boats, and ignition uniter for telephones—all fresh Canadian-made.

Ask a Reliable dealer to show you Reliable products.

DOMINION BATTERY COMPANY LIMITED
Toronto, Canada

RELIABLE
TRADE MARK
Canadian Products
"Lively and Lasting"





WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

THE story opens at Bostil's Ford, in the wild country of the Colorado River. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen.

The story is at present concerned with the adventures of Lin Slone, a daring wild horse hunter. He and two others set out from the uplands of Utah, five hundred miles from Bostil's Ford, and take the trail of a magnificent wild stallion, which Slone names Wildfire. Six weeks elapse; their supplies have nearly given out, and Slone's companions abandon the quest, leaving him to go on alone. Wildfire's tracks lead on into new and unfamiliar country, and Slone reaches the Grand Canon of the Colorado, where the trail becomes perilous. He descends into the desert, and travels on for three weeks more, catching frequent glimpses of Wildfire.

CHAPTER VI—*Continued*

THE nature of the desert had changed. Slone had entered a wonderful region, the like of which he had not seen—a high plateau criss-crossed in every direction by narrow canons with red walls a thousand feet high.

And one of the strange turning canons opened into a vast valley of monuments.

The plateau had weathered and washed away, leaving huge sections of stone walls, all standing isolated, different in size and shape, but all clean-cut, bold, with straight lines. They stood up everywhere, monumental, towering, many-colored, lending a singular and beautiful aspect to the great green-and-gray valley, billowing away to the north, where dim, broken battlements mounted to the clouds.

The only living thing in Slone's sight was Wildfire. He shone red down on the green slope.

Slone's heart swelled. This was the setting for that grand horse—a perfect wild range. But also it seemed the last place where there might be any chance to trap the stallion. Still that did not alter Slone's purpose, though it lost to him the joy of former hopes. He rode down the slope, out upon the billowing floor of the valley. Wildfire looked back to see his pursuers, and then the solemn stillness broke to a wild, piercing whistle.

DAY after day, camping where night found him, Slone followed the stallion, never losing sight of him till darkness had fallen. The valley was immense and the monuments miles apart. But they always seemed close together and near him. The air magnified everything. Slone lost track of time. The strange solemn, lonely days and the silent, lonely nights, and the endless pursuit, and the wild, weird valley—these completed the work of years on Slone and he became satisfied, unthinking, almost savage.

The toil and privation had worn him down and he was like iron. His garments hung in tatters; his boots were ripped and soleless. Long since his flour had been used up, and all his supplies except the salt. He lived on the meat of rabbits, but they were scarce, and the time came when there were none. Some days he did not eat. Hunger did not make him suffer. He killed a desert bird now and then, and once a wildcat crossing the valley. Eventually he felt his strength diminishing, and then he took to digging out the pack-rats and cocking them. But these, too, were scarce. At length starvation faced Slone. But he knew he would not starve. Many times he had been within rifle-shot of Wildfire. And the grim, forbidding thought grew upon him that he must kill the stallion. The thought seemed involuntary, but his mind rejected it. Nevertheless, he knew that if he could not catch the stallion he would kill him. That had been the end of many a desperate rider's pursuit of a coveted horse.

While Slone kept on his merciless pursuit, never letting Wildfire rest by day, time went on just as relentlessly. Spring gave way to early summer. The hot sun bleached the grass; water-holes failed out in the valley, and water could be found only in the canons; and the dry winds began to blow the sand. It was a sandy valley, green and gray only at a distance, and out toward the north there were no monuments, and the slow heave of sand lifted toward the dim walls.

Wildfire worked away from this open valley, back to the south end, where the great monuments loomed, and still farther back, where they grew closer, till at length some of them were joined by weathered ridges to the walls of the surrounding plateau. For all that Slone could see, Wildfire was in perfect condition. But Nagger was not the horse he had been. Slone realized that in one way or another the pursuit was narrowing down to the end.

He found a water-hole at the head of a wash in a split in the walls, and here he let Nagger rest and graze one whole day—the first day for a long time that he had not kept the red stallion in sight. That day was marked by the good fortune of killing a rabbit, and while eating it his gloomy, fixed mind admitted that he was starving. He dreaded the next sunrise. But he could not hold it back. There, behind the dark monuments, standing sentinel-like, the sky lightened and reddened and burst into gold and pink, till out of the golden glare the sun rose glorious. And Slone, facing the league-long shadows of the monuments, rode out again into the silent, solemn day, on his hopeless quest.

For a change Wildfire had climbed high up a slope of talus, through a narrow pass, rounded over with drifting sand. And Slone gazed down into a huge amphitheater full of monuments, like all that strange country. A basin three miles across lay beneath him. Walls and weathered slants of rock and steep slopes of reddish-yellow sand inclosed this oval depression. The floor was white, and it seemed to move gently or radiate with heat-waves. Studying it, Slone made out that the motion was caused by wind in long bleached grass. He had crossed small areas of this grass in different parts of the region.

Wildfire's tracks led down into this basin, and presently Slone, by straining his eyes, made out the red spot that was the stallion.

"He's lookin' to quit the country," soliloquized Slone, as he surveyed the scene.

With keen, slow gaze Slone studied the lay of wall and slope, and when he had circled the huge depression he made sure that Wildfire could not get out except by the narrow pass through which he had gone in. Slone sat astride Nagger in the mouth of this pass—a wash a few yards wide, walled by broken, rough rock on one side and an insurmountable slope on the other.

"If this hole was only little, now," sighed Slone, as he gazed at the sweeping, shimmering oval floor, "I might have a chance. But down there—we couldn't get near him."

There was no water in that dry bowl.

Slone reflected on the uselessness of keeping Wildfire down there, because Nagger could not go without water as long as Wildfire. For the first time Slone hesitated. It seemed merciless to Nagger to drive him down into this hot, windy hole. The wind blew from the west, and it swooped up the slope, hot, with the odor of dry, dead grass.

But that hot wind stirred Slone with an idea, and suddenly he was tense, excited, glowing, yet grim and hard.

"Wildfire, I'll make you run with your namesake in that high grass," called Slone. The speech was full of bitter failure, of regret, of the hardness of a rider who could not give up the horse to freedom.

Slone meant to ride down there and fire the long grass. In that wind there would indeed be wildfire to race with the red stallion. It would perhaps mean his death; at least it would chase him out of that hole, where to follow him would be useless.

"I'd make you hump now to get away if I could get behind you," muttered Slone. He saw that if he could fire the grass on the other side the wind of flame would drive Wildfire straight toward him. The slopes and walls narrowed up to the pass, but high grass grew to within a few rods of where Slone stood. But it seemed impossible to get behind Wildfire.

"At night—then—I could get round him," said Slone, thinking hard and narrowing his gaze to scan the circle of wall and slope. "Why not?" . . . No wind at night. That grass would burn slow till mornin'—till the wind came up—an' it's been west for days."

Suddenly Slone began to pound the patient Nagger and to cry to him in wild exultance:

"Old horse, we've got him! . . We've got him! . . . We'll put a rope on him before this time to-morrow!"

Slone yielded to his strange, wild joy, but it did not last long, soon succeeding to sober, keen thought. He rode down into the bowl a mile, making absolutely certain that Wildfire could not climb out on that side. The far end, beyond the monuments, was a sheer wall of rock. Then he crossed to the left side. Here the sandy slope was almost too steep for even him to go up. And there was grass that would burn. He returned to the pass assured that Wildfire had at last fallen into a trap the like Slone had never dreamed of. The great horse was doomed to run into living flame or the whirling noose of a lasso.

Then Slone reflected. Nagger had that very morning had his fill of good water—the first really satisfying drink for days. If he was rested that day, on the morrow he would be fit for the grueling work possibly in store for him. Slone unsaddled the horse and turned him loose, and with a snort he made down the gentle slope for the grass. Then Slone carried his saddle to a shady spot afforded by a slab of rock and a dwarf cedar, and here he composed himself to rest and watch and think and wait.

Wildfire was plainly in sight no more than two miles away. Gradually he was grazing along toward the monuments and the far end of the great basin. Slone believed, because the place was so large, that Wildfire thought there was a way out on the other side or over the slopes or through the walls. Never before had the far-sighted stallion made a mistake. Slone suddenly felt the keen, stabbing fear of an outlet somewhere. But it left him quickly. He had studied those slopes and walls. Wildfire could not get out, except by the pass he had entered, unless he could fly.

Slone lay in the shade, his head propped on his saddle, and while gazing down into the shimmering hollow he began to plan. He calculated that he must be able to carry fire swiftly across the far end of the basin, so that he would not be absent long from the mouth of the pass. Fire was always a difficult matter, since he must depend only on flint and steel. He decided to wait till dark, build a fire with dead cedar sticks, and carry a bundle of them with burning ends. He felt assured that the wind caused by riding would keep them burning. After he had lighted the grass all he had to do was to hurry back to his station and there await developments.

The day passed slowly, and it was hot. The heat-waves rose in dark, wavering lines and veils from the valley. The wind blew almost a gale. Thin, curling sheets of sand blew up over the crests of the slopes, and the sound it made was a soft, silken rustling, very low. The sky was a steely blue above and copper close over the distant walls.

That afternoon, toward the close, Slone ate the last of the meat. At sunset the wind died away and the air cooled. There was a strip of red along the wall of rock and on the tips of the monuments, and it lingered there for long, a strange, bright crown. Nagger was not there had disappeared, probably behind one of the monuments.

When twilight fell Slone went down after Nagger and, returning with him, put on bridle and saddle. Then he began to search for suitable sticks of wood. Further back in the pass he found stunted dead cedars, and from these secured enough for his purpose. He kindled a fire and burnt the ends of the sticks into red embers. Making a bundle of these, he put them under his arm, the dull, glowing ends backward, and then mounted his horse.

It was just about dark when he faced down into the valley. When he reached level ground he kept to the edge of the left slope and put Nagger to a good trot. The grass and brush were scant here, and the color of the sand was light, so he had no difficulty in travelling. From time to time his horse went through grass, and its dry, crackling rustle, showing how it would burn, was music to Slone. Gradually the monuments began to loom up, bold and black against the blue sky, with stars seemingly hanging close over them. Slone had calculated that the basin was smaller than it really was, in both length and breadth. This worried him. Wildfire might see or hear or scent him, and make a break back to the pass and thus escape. Slone was glad when the huge, dark monuments were indistinguishable from the black, frowning wall. He had to go slower here, because of the darkness. But at last he reached the slow rise of jumbled rock that evidently marked the extent of weathering on that side. Here he turned to the right and rode out into the valley. The floor was level and thickly overgrown with long, dead grass and dead greasewood, as dry as tinder. It was easy to account for the dryness; neither snow nor rain had visited that valley for many months. Slone whipped one of the sticks in the wind and soon had the smoldering end red and showering sparks. Then he dropped the stick in the grass, with curious intent and a strange feeling of regret.

Instantly the grass blazed with a little sputtering roar. Nagger snorted. "Wildfire!" exclaimed Slone. That word was a favorite one with riders, and now Slone used it both to call out his menace to the stallion and to express his feeling for that blaze, already running wild.

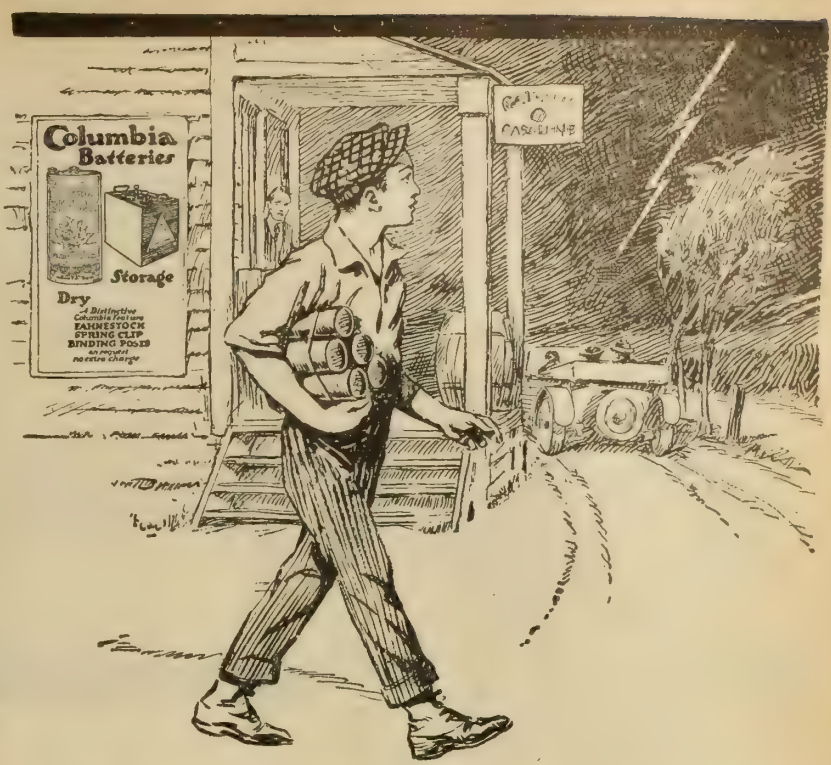
Without looking back Slone rode across the valley, dropping a glowing stick every quarter of a mile. When he reached the other side there were a dozen fires behind him, burning slowly, with white smoke rising lazily. Then he loped Nagger along the side back to the sandy ascent, and on up to the mouth of the pass. There he searched for tracks. Wildfire had not gone out, and Slone experienced relief and exultation. He took up a position in the middle of the narrowest part of the pass, and there, with Nagger ready for anything, he once more composed himself to watch and wait.

Far across the darkness of the valley, low down, twelve lines of fire, widely separated, crept toward one another. They appeared thin and slow, with only an occasional leaping flame. And some of the black spaces must have been monuments, blotting out the creeping snail-lines of red. Slone watched, strangely fascinated.

"What do you think of that?" he said, aloud, and he meant his query for Wildfire.

As he watched the lines perceptibly lengthened and brightened and pale

Continued on page 25



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THE mighty thunder cloud often generates and wastes 150 thousand horsepower, when it hurls its terrific bolt flashing and crashing through the sky.

The fiery little Columbia generates a fraction of this volume, but sends its power on a specific errand, through wires, under control, without waste.

It is electricity in both cases. But the mighty thunder cloud works at the command of Nature for an unknown purpose. The fiery little Columbia works at your command for a definite use.

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THE Columbia Dry Battery is the handyman of the world. It ignites stationary engines, autos, trucks, tractors, and motorboats; rings bells and buzzes buzzers; lights lanterns and makes telephones talk; runs toys for the youngsters.

Motorists the world over know the wisdom of carrying the extra set of vigorous Columbias—to be connected in a jiffy when the regular ignition begins to loaf.

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THE Columbia Storage Battery is so hale and hearty it is guaranteed to do definite work for a definite time. Its health certificate even stimulates that another battery will be put to work for you without additional cost if the original should fail within the guarantee period.

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Columbia Storage and Dry Batteries

A 19

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CANADIAN FERTILIZER CO., LIMITED
22 Market Chambers, Chatham, Ont.

5% Early-Deliv

EVERY industry in Canada and the United States is facing conditions today unlike any it has had to meet in the past. The reabsorption of millions of men back into their regular work without throwing men in the present organization out of employment is one problem that must be solved. This is far more serious for some industries than for others. For the Harvester Company it means taking back nearly 5,000 men into an organization, which, as an essential industry, it maintained at a high state of efficiency throughout the period of the war. It is going to be no easy matter to do the right thing by these boys, but the Company can and will do it. You can help if you will, and profit by helping.

To assist in providing places for these boys who are now coming back, many of whom left the tractor factories to join the ranks, it will be necessary to bring about an immediate increase in tractor production. The tractors will be needed, but before the Company can handle any greatly increased number of them, we must move forward to the farms some thousands that have been ordered for delivery at various dates up to May 1st.

Too Many Say, "Ship My Tractor in April"

Many of you remember the difficulties connected with April and May shipments of tractors in past years. Do the best we could, we have never been able to supply the demand or make all deliveries as ordered. The need of tractors for Spring work comes at just the period in the year when great quantities of all kinds of Spring tools and implements are being rushed forward. Tractors cannot be moved as readily as implements. Their size is against quick movement, and there is always more or less delay in securing flat cars. Railroad congestion must also be given serious consideration.

We naturally want to avoid these difficulties and escape the blame which we unjustly earn for being unable to fill late orders of tractors for Spring use. While the Company has already shipped 170 per cent more tractors this year than at the same time last year, yet the number of orders we are receiving for April shipment is so large that we shall not be able to make deliveries in time unless we can ship a large number of them at an earlier date.

Farmers who cannot take their tractors until later deserve as much consideration as those who must have theirs in April or early May, which is the peak month for the work of spring seed-bed preparation. Many farmers have placed their orders for delivery in April who could just as well take their tractors now, thus avoiding any chance of disappointment in delivery and enabling us to take care of the later orders, which we could not otherwise handle.

INTERNATIONAL HARVEST

Branch Houses WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta.
N. Battleford, Sask., Regina, Sask., Saskatoon, Sa

y Discount

Our Early-Delivery Discount Plan

To you men who have already placed your orders for Mogul or Titan 10-20 tractors and who can accept deliveries immediately—and this applies equally well to those who have not yet ordered — we have the following proposition to make:

If you will take your Mogul or Titan tractor now instead of waiting for your specified delivery date we will reward your co-operation as follows:—

To those *who will accept delivery* of a Mogul or Titan 10-20 *on or before March 15th* we will give an Early-Delivery Discount of 5 per cent from the cash delivery price of the tractor. (This amounts to about $60.00.)

After March 15th the following discounts will be given:

For delivery during week of					March	17	to	March	22	incl.	4%
"	"	"	"	"	"	24	"	"	29	"	3%
"	"	"	"	"	"	31	"	April	5	"	2%
"	"	"	"	"	April	7	"	"	12	"	1%

This discount will go a long ways toward paying the fuel bills of your tractor during this season.

By taking advantage of this Early-Delivery Discount, you will not only be helping yourself, but will enable the Company more easily to put back to work all the boys who have served their country so well without breaking up our present organization.

You will find that you need a few weeks to get acquainted with your new tractor. The man who gets his tractor early can become familiar with it, so that when the first day of good plowing weather dawns he will be able to get in the field without a moment's lost time. In itself we should deem that a sufficient reason for taking early delivery, but when you add to this the early delivery discount authorized above, we are sure you will agree that the man who has placed an order for a tractor cannot possibly do better than ask for immediate delivery. Likewise, those who are thinking of buying some time this spring can well afford to make up their minds immediately that their tractor is going to be a Mogul or Titan 10-20 and that they are going to have it sent out to their farms at once.

Now that you know the situation, may we hope that you will act upon it at once? We have tried to set it before you in a broad-minded manner; one that would be fair and beneficial to everybody concerned. We await your response confident that you will see the wisdom of accepting this offer.

Go to your agent and tell him that you will accept mmediate delivery of your Mogul or Titan 10-20 n. p. tractor, so he can make up his carload shipments without delay.

COMPANY OF CANADA, Ltd.

n, Sask., Lethbridge, Alta., hipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

The rightful loveliness of your skin!

The best tonic to waken the skin to its rightful loveliness is a soap whose pure, abundant lather delicately *creams into* tiny pores, as thoroughly *creams out again,* and rinses *out* and *off perfectly*—Fairy Soap!

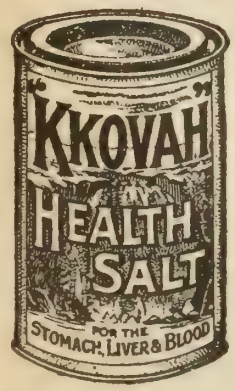
If you have not already made friends with Fairy Soap, you have a pleasant surprise in store for you. You will do well to buy several cakes of Fairy Soap—use "Fairy" *consistently.*

For Toilet and Bath

THE N.K. FAIRBANK COMPANY
LIMITED
MONTREAL

Start the day well and assure robust health

Acquire the Kkovah habit—a teaspoonful in the morning on rising. It's deliciously refreshing and gives an added appetite for breakfast. It cleanses the system and aids digestion.



Kkovah Health Salt

Its valuable saline properties act as a tonic—re-energising the organs, helping them in Nature's own way to remove all poisonous and waste matters. It dispels that feeling of lassitude which is the result of working long hours and taking hurried meals.

Obtained from Grocers, Drug Stores, etc.

Sutcliffe & Bingham, Ltd., Manchester, England

MEMO:

Don't forget to put a tin in the next parcel you send to your boy at the front. It'll keep him fit.

FASTER SHEARING

Shear with a machine—save time and money. You can shear at least one-half faster. Get 15% more of longer, better wool and not scar the sheep. Get a Stewart No. 9 Ball Bearing Shearing Machine. Fine for flocks up to 300 head. If dealer can't supply you send us his name. Write for catalog.

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Hot Lunch and Domestic Science in Rural Schools

From Inspector A. H. Leake's address to the Women's Institute

WE have from 50 to 75 rural schools teaching Household Science, which shows it can be done in all rural districts. Let me give you an experience I had in one school. I went in before nine o'clock in the morning. I saw four girls paring potatoes; a couple of boys were carrying buckets of water. These girls were preparing the potatoes for soup. They made all their preparations before nine o'clock. School went on until recess. These girls then prepared the soup and placed it on the stove—a three-flame burner oil stove which they had in the corner of the room. The girls then went back to their work. Between 11 and 12, the girls left their work occasionally to see that everything was going on all right. At 12 o'clock school was stopped. Every girl and boy washed their hands and smoothed their hair. They sat at their desks and took out their lunch boxes; some had paper serviettes, some linen napkins, and others oilcloth which they spread on their desks. They left their places, walked up to the front where each was served with a bowl of potato soup and they ate their lunch in an orderly manner.

In another rural school I saw the teacher writing the work at the blackboard and eating her lunch at the same time. The boys and girls were crowded around the stove and some were running around the room. Is that the way to have lunch?

Before the lunch, in the first school the teacher stood up in front of the class and said grace. The whole thing took about half an hour. Certain boys and girls were appointed to clean up, and the boys, let me tell you, did their share in the business; they carried water, and washed and dried dishes, and why shouldn't they? We have an idea that the homes are all made by the women—nothing of the sort. It takes two people to make a home, and why should not our boys have their duties in housekeeping and in making a home of the house, as well as the girls? Until we get that point of view, we are not going to have the homes we ought to have.

Another school had a large table and the children sat around and had their lunch together, as they would at home. The result of such courses is that the work in the afternoon is very much better.

What are the advantages of hot lunch? Without exception every teacher who conducts this hot lunch says the work in the afternoon is very much improved, and there is a better spirit among the children and in the community.

Of course where this work is going to be carried on, the trustees, parents and teachers must co-operate. Trustees, you know, do not like new-fangled ideas, but get an energetic teacher and let her show what can be done, and the Board are generally willing to give it a trial. If a thing cannot stand on its own feet after a trial, throw it out. A good deal depends on the teacher. No matter how enthusiastic the Board or parents may be, the teacher can kill this work without saying a word. All she has to do is shrug her shoulders and turn up her nose and the thing is done.

In order to carry on this work, the Department of Education has been for some time experimenting with equipment. We have had two Normal schools develop an equipment which can be put into the rural schools, consisting of a three-flame burner stove, covered by a cabinet, and a small cupboard containing the necessary utensils. In an advertisement there is shown an illustration of the equipment, and you are also told of the advantage. That equipment can be put in the corner of any one-roomed school, and costs from $40 to $75. We also ask that the little children—the younger grades—shall have two half-hours a week for needle work and sewing—not only making but mending. You know probably better than I do the immense waste there is because we do not know how to mend properly, and for the life of me, I cannot see why every girl throughout this Province should not be taught how to sew.

I do not want to be parading English practice to you all the time, but every girl in every school throughout Great Britain spends 2½ hours a week at sewing, and I really do not think we would be asking too much if we asked for 2½ hours. As things are at present we only ask for two half-hours, and one hour a week in cooking or household management.

We have prepared a Manual on Household Science for schools. This contains absolutely nothing that cannot be done in any one-roomed school. There are 20 lessons in sewing; 20 on the care of the home and 20 in simple cooking. We have been apt in the past to look upon household science as cookery, but there is the living-room, the bedrooms and the bath-room and the general care of the home which requires as much attention as the kitchen.

There is rather an extensive chapter on the school lunch, giving a large number of dishes, their preparation and recipes. The department is doing all it can to encourage this work. We give a grant to every school board that puts in this equipment from $40 to $75. There is a grant for every teacher who teaches this subject and in the Normal schools we are teaching the work. The teacher may earn from $10 to $60 more, according to the character of her certificate, and in addition we provide $10 extra to the teacher if she serves a hot dish from November to March.

If I had my way there would be a regulation which made it absolutely essential for the school lunch to be supervised. I mean, no rural school would be allowed to leave the children in the school from twelve to one-thirty without the supervision of a teacher or somebody in authority. I visited one two-teacher rural school at noon. The teachers were gone and the boys and girls having their lunch. They were running all over the place; boys and girls everywhere mixing together, and I am absolutely convinced there is more moral and physical harm done during that unsupervised hour, than any other time during the week. It should not be a difficult matter to get the teacher to stay or somebody to look after the children.

I would just like to read one or two letters I have received from rural school teachers who have introduced this work.

One girl says: *"Surely this is missionary work, for the heathen are not all in foreign lands. When teachers who really love their classes have to work with school boards who are as dead as door-nails, believe me, it is martyrdom."*

This girl sends me the receipted bill for the cost of the equipment, and adds: "I spoke to my secretary-treasurer and he seemed favorable. A week later I learned he had interviewed the Board, and they called it nonsense. That did not discourage me in the least. I knew everything must struggle for existence. I requested a meeting of the School Board. At last I met my Board last Friday night, and after an hour's talk with them, my efforts were crowned with success, and the Board were really and truly converted."

Another girl at Snelgrove says: "I must thank you for converting the trustees. We have all the equipment now for hot lunches and began the work last Tuesday. They have been successful so far."

Another girl says: "We have the hot dish for lunch going. The Board did not favor it, but as the children are anxious we are going to manage it with

no cost to the Board except the oil. At the end of the month we hope to have macaroni and cheese and scalloped potatoes. In sewing, we have an hour's practice once a week. The boys fill the pails and wash the dishes as cheerfully as the girls do."

Just a word about manual training. The boys are taught how to do things; I cannot see why a rural school should have a broken chair or hinges off the doors or windows when there are four or five boys anxious to do things and to be shown how to do them. At a school in England where they charge the highest fees of any school for boys in Great Britain, Abbotsham, the boys do all the work around that school,—felling trees, cement work, carpenter work, painting for the school and all these things. The Educational Department is doing all it can, and we appeal to you to give your assistance. I am willing to speak to any Women's Institute that is anxious to consider this question of Household Science and hot lunch in the rural schools. This movement is going to spread like wild fire throughout this Province.

RECIPES

CLEAN a haddock, salmon or white fish, scale, remove the bones and sprinkle with salt inside and out. Stuff with a stuffing made of the following:

½ cup cracker crumbs
1 cup stale bread crumbs
¼ cup melted butter
¼ teaspoon salt
1/8 teaspoon pepper
Juice of one small onion
¼ cup hot water.

Sew up, place on a greased fish sheet in a dripping-pan, brush with melted butter, dredge with flour, and if it is a dry fleshed fish put a few pieces of fat pork in the pan. Bake in a hot oven, basting as soon as the fat is tried out and continue basting every ten minutes.

Codfish Balls

1 cup salt codfish
2 heaping cups potatoes
1 egg
½ tablespoon butter
1/8 teaspoon pepper.

Wash fish in cold water and pick or cut in small pieces. Wash and pare potatoes, cutting in pieces before measuring. Cook fish and potatoes together in enough water to cover, until potatoes are soft. Drain, mash, add butter, egg well beaten, and pepper. Beat with a fork until the mixture is light and fluffy; add salt if necessary. Drop by spoonfuls on a well-greased frying-pan. When brown on one side turn and brown on the other.

Cream of Onion Soup

4 medium sized onions
Enough water to cover
1 pint milk
2 teaspoons butter
2 tablespoons flour
1 teaspoon salt
Few grains pepper.

Chop the onions fine and simmer in water until tender. Add the milk and scald. Melt the butter in a saucepan and blend in the flour. Gradually add the liquid, stirring until it thickens. Potatoes, celery, canned corn, or peas may be substituted for the onion. If corn or peas are used rub through a sieve before adding the milk.

Raisin Tea Ring

3 cups flour
5 tablespoons sugar
4 teaspoons baking powder
1 teaspoon salt
½ to ¾ cup milk
3 tablespoons shortening
1 egg
1 cup raisins, washed, drained and floured
½ cup chopped nuts

Sift the dry ingredients together; add the raisins. To one-half cupful of milk, add the melted shortening, sugar and beaten egg. Mix thoroughly and add to the dry ingredients. Add milk enough to make a soft dough. Roll out about one-half inch thick, divide into two long strips and twist together, bringing the ends around to form a ring. Put in a greased pan and sprinkle with a little sugar and chopped nuts. Let it rise in the pan for fifteen minutes and bake in a moderate oven for about twenty-five minutes.

Welcome Home Canadians

It is glorious to see you back again—to know that you who were prepared to give up life itself in the fight for Freedom, have gained the objective without being called upon to make the great sacrifice.

Rousing cheers, waving flags, and hearty handgrips will greet you.

With tears, we watched you go. With pride, we followed your fighting. It is with glad hearts we welcome you back. The wild delirium on November 11th was mainly because the danger to you had passed.

There will be a number of people less demonstrative in their welcome to you Home Coming Soldiers. You will understand, for you, too, mourn the comrades left behind.

And now for the days to come.

How best can you settle down to productive work on the land, and take up the implements laid aside for a time? Profit by the experience you gained in the Army.

Take the greatest pride in keeping your equipment in good working order, and bring to the world at Peace the loyal co-operation which animated the Canadian armies. Then you will be headed for success and happiness. You will make rapid advancement.

You learned, too, the value of smartness in appearance. It was not by mere chance that you acquired the habit of the daily shave with your Gillette Safety Razor, that inspecting officers demanded smooth chins, and perfection in the kit.

These things kept a man alert, and they are well worth preserving in civil life.

You lay down your rifle. You put aside your uniform and accoutrements to take up the implements of agriculture; but you would not part with your Gillette Safety Razor—it is the one item in your equipment as necessary to the man in civies as to the soldier. Your Gillette will continue to serve you every morning.

It is possible that your Gillette Safety Razor has disappeared in one of the many moves you have made during the last few months. A dozen things might have happened to necessitate your investing in another Gillette; if so, the price is still $5.00, and almost any jeweler, druggist, or hardware dealer is ready to supply you.

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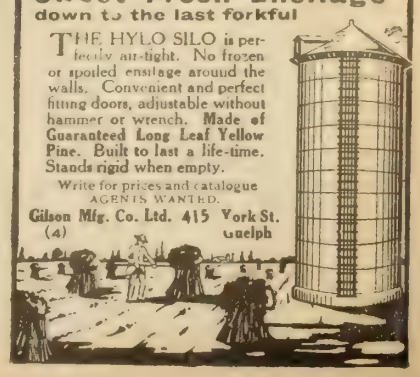

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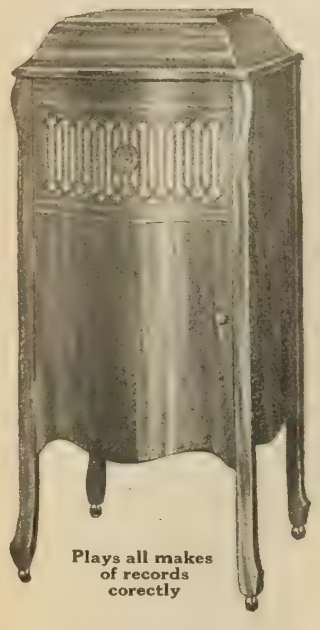

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INFORMATION WANTED

ANYONE KNOWING THE WHEREabouts of Charles W. Cummings, otherwise called Charles W. LaHue, please communicate with the undersigned. A reward of $5.00 given for such information. Cummings has one arm, is about 50 years old, of stocky build, with black hair and moustache. Former inmate of Rochester State Hospital. Sarah Cummings, 13 Elwood Bldg., Rochester, N.Y. (Mch 1-19)

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DOMINION INCOME WAR TAX ACT

TO WHOM APPLICABLE.

Every person who in 1918 resided or ordinarily resided in Canada or was employed in Canada or carried on business in Canada, including corporations and joint stock companies

WHO SHOULD FILE RETURNS.

1 Every unmarried person or widow or widower, without dependent children under twenty-one years of age, who during calendar year 1918 received or earned $1,000 or more.

2 All other individuals who during calendar year 1918 received or earned $2,000 or more.

3 Every corporation and joint stock company whose profits exceeded $3,000, during the fiscal year ended in 1918.

FORMS TO BE FILLED IN AND FILED

FORM T1. By individuals, other than farmers and ranchers
FORM T1A. By farmers and ranchers.
FORM T2. By corporations and joint stock companies.
FORM T3. By trustees, executors, administrators of estates and assignees
FORM T4. By employers to make return of the names of all directors officials, agents or other employees to whom was paid $1,000 or more in salaries, bonuses, commission or other remuneration during the calendar year 1918
FORM T5. By corporations, joint stock companies, associations and syndicates to make return of all dividends and bonuses paid to shareholders and members during 1918.
Individuals comprising partnerships must file returns in their individual capacity.

GENERAL INFORMATION.

All returns must be filed IN DUPLICATE

Forms may be obtained from the Inspectors and Assistant Inspectors of Taxation and from the Postmaster's at all leading centres.

Returns should be filed immediately

Postage must be prepaid on letters and other documents forwarded by mail to Inspectors of Taxation.

Address of Inspector of Taxation for this District:

TORONTO DISTRICT.

Inspector of Taxation,
59 Victoria Street, TORONTO, Ont.

A FIELD THAT IS RIPE

Continued from page 10

parents knew their children needed to have adenoids or tonsils removed, but on account of the dread of taking a child off to the city and leaving it there for a few days and because of the lack of money to pay the surgeon's bill and hospital fees they had put off having anything done. They were eager to have them treated in the school clinic where the charges were reasonable and where they did not have to leave the children far from home. Medical inspection of rural schools promises to become general in Ontario at least, and no doubt the Women's Institutes will keep up their good work in arranging clinics to have the ailing children cared for—but there are sections where there are no Women's Institutes nor any possible facilities for holding clinics, and even if clinics were held semi-annually, which is almost more than we could expect, a child could suffer a lot in the meantime. When each county or district has its municipal hospital with free beds for those who cannot afford to pay and when medical inspection becomes an established feature of our rural school system we will be nearer the Utopia where every child has a fair chance for health.

In the more sparsely settled districts like the prairies and Northern Ontario, the need of medical attendance for the people requires not only more hospital accommodation, but a corps of public health nurses ready to go out to the homes of the settlers. This system is working very well in some of the prairie districts. In new Ontario, however, some rather tragic things have happened for the want of medical attention. Mrs. Willet, a district nurse working under the Institutes Branch of the Ontario Department of Agriculture with headquarters at Cochrane, is doing wonderful work and blessed by the people from one end of the district to the other, but there is always the heartbreaking need crying to her from the areas she can't touch. Imagine one nurse trying to minister to the needs of a district where there may or may not be a doctor in a radius of sixty miles, and such poverty in places that her patients come up to a case so undernourished that her problem is a double one. The women who come down from the north country to place their petitions before the Government have some strange stories to tell, like the case of the woman who had to be taken twenty miles on a sleigh, hauled by her husband and another man, to Cochrane hospital, and her baby was born before they got there. Considerable money is being spent in one way or another to open up this new country, to clear it and stock it and bring in settlers. It is strange that any care for the health of the people, especially for the women who are giving the country its new life, should seem such an unwarrantable expenditure.

BUT the need is not alone for the pioneer sections. It is something for which the rural districts of the older provinces have suffered as well. How poorly we were equipped to fight the epidemic of influenza this fall! Trained nurses for the country were out of the question; everyone was on a case in the city with a steadily growing waiting list ahead of her. If we had had hospitals here and there in our own counties we would have had nurses on the job. We would have had a place where volunteer nurses from among our own girls and women could have taken a few lessons on the special treatment of this disease before going out to fight it in the homes of the community; and we would have been educated earlier to the extreme need of precautions.

In numberless other ways the community hospital would be a blessing. In a little town on Lake Ontario they have a most homelike hospital, one of the best equipped in Canada. The nurses in training are practically all girls from the district; it is an institution in which the whole community is interested; they feel it is their own. Here is one individual case which shows just what it means. A woman well on in years, living with her only son, had a serious illness which will leave her an invalid for the rest of her life. The son was unmarried, his income was not large, it was impossible to get anyone in the house to give his mother the care she needed; to send her to an institution away from her old neighborhood would have broken her heart—and probably his. But she has a room in the hospital where she can look out and see her neighbors going up and down the streets and her son comes in to see her every night. It is almost like being at home.

THERE is the question of cost. Writing of the financial working out of municipal hospitals in Saskatchewan, A. G. McDonald says: "The question is often raised as to what the probable cost would be for, say, four rural municipalities co-operating with an urban centre of some 500 population and an assessment of approximately $750,000. For such a community an institution would be required with at least twenty-five beds, and roughly estimating each of the rural municipalities to have a population of one thousand people this would provide accommodation of one bed for every 180 inhabitants.

A 25-bed hospital, according to the most reliable estimates that have been procured, would cost to build and equip from $35,000 to $40,000. Assuming that it could be built and equipped for $35,000, raised by debentures extending over a period of thirty years, and bearing interest at the rate of 6 per cent. per annum, what would be the capital cost confronting the co-operating municipalities?

The amount provided each for this proposal would be:

For principal or sinking fund	$1,166.65
For interest	2,100.00
For depreciation	500.00
	$3,766.65

Which would be roughly divided as follows:—

From each of the four rural municipalities	$ 941.65
From the urban municipality	295.00

Of course in this reckoning we have overlooked what the community saves indirectly by taking care of those who are financially unable to take care of this. A painter with three children received an early diagnosis of tuberculosis. He tried to enter the State institutions, but they were too crowded. Lacking money he was not properly cared for at home and died. The little savings had been exhausted and the overworked wife contracted the same disease and died within the year, while she and her children were "on the town." If the county had had a hospital the father would have had a chance for life. At least he could have saved his wife the steady contact of caring for him and her infection might have been avoided. In either event if he had lived or if his wife had lived, the family in all probability would not have become town charges. The practical tax-payer's interest in this story follows. If the county had had a hospital the effect of the man's illness on the tax levy would have been:

One year's care in the county hospital, at $10 per week	$520
Less patient's contribution to his own support	200
Balance paid by county	$320

There was no hospital whatever so the father and the mother died, and this is the way the public account stands:

Care of father	Nothing
Mother's doctor's bills paid by town	$ 50
Support of family during mother's illness	50
Funeral expenses of mother	25
Care of 2-year old child in orphan asylum for 12 years	1,800
Care of 4-year old child in orphan asylum for 10 years	1,500
Care of 5-year old child in orphan asylum for 9 years	1,350
Total	$4,775

The community hospital is not an experiment. It is working most satisfactorily in the West, and a small town hospital like the one in Bowmanville testify to its practicability in Ontario. There are some definite plans under way for a county hospital in Peel and there is little doubt that, given the Government support it deserves, the movement would spread widely.

The League of Health Conduces to Long Life

The Allies, at the conclusion of hostilities, hit upon the plan of a league of nations as promotive of peace and harmony among the powers and a preventive of further wars.

What is essential to the well-being of the nations is necessary to the health and comfort of the individuals who make up those nations. There must, in other words, be unity in a person's physical or organic system as well as a nation's political system. If any one of the bodily organs does not work in unison, does not function properly there is war amongst the different parts of the body in which all suffer. When all work together they form, so to speak, a league of health to resist the insidious or open attacks of disease which, with mysterious power, seek to undermine and destroy organic union which alone maintains healthy life.

Sometimes the attacks of these sinister forces progress with such secrecy as to slay with startling suddenness some person who was thought to be the picture of health. But more often certain symptoms betray the presence of the destroyer, warning the intended victim to beware and to take the necessary measures to protect the citadel of health.

Such symptoms as lack of interest in life, decreasing energy, nausea, pains after eating, prolonged constipation, dull and sick headache, etc., infallibly indicate a disorder of the stomach or other digestive organs. To ignore these symptoms is dangerous, for an impaired digestion weakens one's powers of resistance to a tremendous degree.

The better plan is to heed the warning and to begin immediately on a course of treatment with Parmelee's Vegetable Pills, that fine old standard remedy to which many thousands of people have good cause for feelings of deep gratitude.

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J. H. Connor & Son, Ltd.
OTTAWA - ONTARIO

WILDFIRE

Continued from page 19

shadows of smoke began to appear. Over at the left of the valley the two brightest fires, the first he had started, crept closer and closer together. They seemed long in covering distance. But not a breath of wind stirred, and besides they really might move swiftly, without looking so to Slone. When the two lines met a sudden and larger blaze rose.

"Ah!" said the rider, and then he watched the other lines creeping together. How slowly fire moved, he thought. The red stallion would have every chance to run between those lines, if he dared. But a wild horse feared nothing like fire. This one would not run the gantlet of flames. Nevertheless, Slone felt more and more relieved as the lines closed. The hours of the night dragged past until at length one long, continuous line of fire spread level across the valley, its bright, red line broken only where the monuments of stone were silhouetted against it.

The darkness of the valley changed. The light of the moon changed. The radiance of the stars changed. Either the line of fire was finding denser fuel to consume or it was growing appreciably closer, for the flames began to grow, to leap, and to flare.

Slone strained his ears for the thud of hoofs on sand.

The time seemed endless in its futility of results, but fleeting after it had passed; and he could tell how the hours fled by the ever-recurring need to replenish the little fire he kept burning in the pass.

A broad belt of valley grew bright in the light, and behind it loomed the monuments, weird and dark, with columns of yellow and white smoke wreathing them.

Suddenly Slone's sensitive ear vibrated to a thrilling sound. He leaned down to place his ear to the sand. Rapid, rhythmic beat of hoofs made him leap to his feet, reaching for his lasso with right hand and a gun with his left.

Nagger lifted his head, sniffed the air, and snorted. Slone peered into the black belt of gloom that lay below him. It would be hard to see a horse there, unless he got high enough to be silhouetted against that line of fire now flaring to the sky. But he heard the beat of hoofs, swift, sharp, louder—louder. The night shadows were deceptive. That wonderful light confused him, made the place unreal. Was he dreaming? Or had the long chase and his privations unhinged his mind? He reached for Nagger. No! The big black was real, alive, quivering, pounding the sand. He scented an enemy.

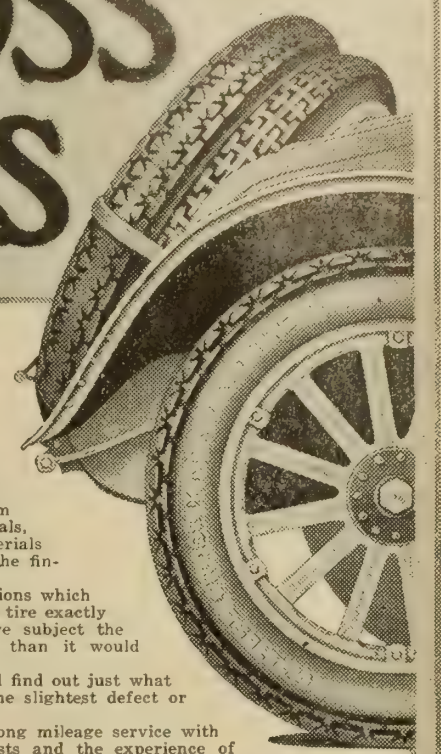
Once more Slone peered down into the void or what seemed a void. But it, too, changed, lightened. The whole valley was brightening. Great palls of curling smoke rose white and yellow, to turn back as the monuments met their crests, and then to roll upward, blotting out the stars. It was such a light as he had never seen, except in dreams. Pale moonlight and dimmed starlight and wan dawn all vague and strange and shadowy under the wild and vivid light of burning grass.

In the pale path before Slone, that fanlike slope of sand which opened down into the valley, appeared a swiftly moving black object, like a fleeting phantom. It was a phantom horse. Slone felt that his eyes, deceived by his mind, saw racing images. Many a wild chase he had lived in dreams on some far desert. But what was that beating in his ears—sharp, swift, even, rhythmic? Never had his ears played him false. Never had he heard things in his dreams. That running object was a horse and he was coming like the wind. Slone felt something grip his heart. All the time and endurance and pain and thirst and suspense and longing and hopelessness—the agony of the whole endless chase—closed tight on his heart in that instant.

The running horse halted just in the belt of light cast by the burning grass. There he stood sharply defined, clear as a cameo, not a hundred paces from Slone. It was Wildfire.

(To be Continued)

MALTESE CROSS TIRES



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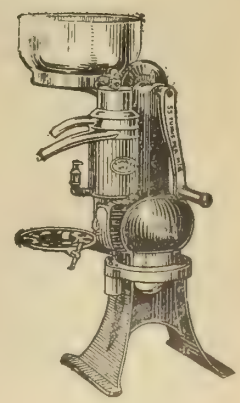

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E-B
Disc Harrows

FARM ENGINEERING

What is the Ideal Gas Tractor?

By PROFESSOR L. J. SMITH
Manitoba Agricultural College

THE choice of a gas tractor is indeed a difficult problem. The market is flooded with a great variety of types of engines, so that the inexperienced prospective buyer is at a loss as to just what type to select. It is like the choosing of a wife, it may be for the better or for the worse. One thing is sure, the transaction is not one to be lightly made, though as in the above comparison, it may be, and with the disastrous results of many a hasty marriage.

What is the best tractor to buy? The green buyer is told one thing by one man, and someone else tells him another.

In the first place, look into what is behind the tractor. Does it come from a reliable firm, whose past business history will warrant confidence? Will the firm stand behind the outfit that they sell you? Will they make good broken parts through defective material? Has the tractor been on the market long enough to have established its worth and durability? Is there an agency reasonably near, and well stocked with repairs so that you will not be held up at a critical time? Is the tractor firm likely to be in the market five years hence?

All these are important points and should be carefully considered even before deciding as to the best type of tractor for your conditions

What is the ideal tractor? It is a hard question to answer. If tractor designers could agree, or if they would get together for the purpose of coming to a uniform type, we would soon have the ideal tractor. Unfortunately, it is very difficult for a firm to come to a point where they will change their already carefully thought-out designs, and adopt the good points of other tractors. Their enthusiasm for the good points of their machine and their strong loyalty for their firm and everything that it makes, often is a serious handicap to the progress that all desire. Often it is practically impossible to make radical changes in the tractor without throwing away the results of their own careful designing and experimenting, and beginning all over again.

Then, too, the popular demand changes, or some strong competing firm causes another firm to build a somewhat similar type tractor even though they feel that some other type is much better. These are some of the things that stand in the way of more rapid progress toward the ideal tractor.

Two factors will have a strong influence on future tractor design, the aggregate judgment of the farmer as he becomes more experienced in the "tractor game"; and automobile practice. To deal briefly with the first point, it is sufficient to say that no firm, however clever their salesmen may be, will be able to sell the farmer the type of tractor that he does not want, once he really knows what he does want.

The ideal type tractor will have to make good on the land, and the final judge will be the farmer.

As to the second point, the rapid progress made by the automobile firms in regard to uniformity of design, points logically to a similar path for the tractor firms. Freak tractors and the numerous types of to-day are not essential to, but rather a great hindrance to, the universal use of tractors on the farm. The rapid growth of the automobile industry is due more to uniformity than many might think, and as a variety of widely different types of cars were not essential to progress in the automobile trade, so a great variety of types are not essential to the tractor industry.

A type of tractor that does not make good hurts the whole tractor business. The farmer will be afraid of being stung twice in the same spot. When the tractor firms come to see the logic of this point, they will get together, and the ideal tractor will be a thing of the near future.

In general, the tractor designers should follow more closely the automobile practice of making repair parts for each individual wearing surface and making the parts as small as possible. Of all the makes of cars, does one see models of 8 or 10 years ago thrown aside in the fence corner? No, but one does tractors. Wherein lies the difference? Is it not that with the car, each individual wearing part can be replaced without the necessity of buying a lot of parts that are not worn? As an example, compare the wheel of the car with that of the tractor. The auto wheel, with reasonable care, will last indefinitely. The bearings are simply replaced when the wear becomes excessive. How does it go with the ordinary front tractor wheel? Two or three seasons and the wheel and axle are gone. The wear is directly on the hub and the axle—no bushings to replace them to save the larger and more expensive parts, and a new wheel must be bought.

It makes a good repair business but in the long run doesn't help to bring the tractor into universal use on the farm or build up the tractor business to a position comparable with the automobile industry; nor does it live up to the great principle of national conservation of labor, materials and wealth, which the great war has taught us. True, the hub can be replaced, but the average farm is not equipped for such work, and the farmer, rather than tackle the unfamiliar task, buys the whole wheel.

It is this kind of tractor design that puts many a tractor in the fence corner as not being worth overhauling — a piece of machinery worn out before its time, and an object which keeps many a cautious farmer out of the tractor market.

One is tempted to stop at this point and leave the problem of the ideal tractor with the expert designer and experimentalist, backed by sales managers who look ahead and see the advantage of uniform tractor design. But the farmer is asking as to what is the best type of tractor to buy. The next article will discuss some of the good features in the various tractors which may be accepted as approaching the requirements of the ideal tractor.

AUTO, TRUCK, AND TRACTOR COMPRESSION TROUBLES

By Chas. H. Willey

LOSS of power is nearly always directly traceable to lack of compression in one or more of the engine cylinders. Causes of poor compression are leaky or warped valves, broken or worn piston rings, and carbonization is mostly responsible for these troubles. Poor carburetor adjustment and faulty lubrication are causes of carbon deposits. Carbon collects on the valve seats, valve heads, and stems, especially the exhaust valve, for it is through the opening of this valve that the burned gases are expelled. Small

particles of carbon adhering to the valve seat cause it to remain open a small amount. When a valve does not seat properly it causes leakage. As an illustration we will say that the exhaust valve of one cylinder does not seat, due to carbon. Just how this reduces the power and efficiency of the engine we will see by following its effect on the four strokes that the piston makes. The first stroke is called intake or suction; this is the down stroke, and the intake valve is opened by the cam. A leaky or slightly open exhaust valve will allow the piston to pull in some of the burnt gases on this stroke, and lessens its ability to draw in the proper amount of new gas from the intake valve; thus we have a poor mixture that is weak.

The next stroke is called the compression stroke. The intake valve is closed, and the upward moving piston forces the volume of gas ahead of it, up against the cylinder head and against the valve heads, thus compressing it to a high pressure. You can readily understand that if the exhaust valve leaks, a lot of this gas is forced out through it—thus we call it loss of compression.

The next stroke is the power stroke, and of course when the mixture of gas is exploded it exerts a great pressure. A lot of this pressure escapes through a leaky valve, though of course the greater loss of power comes through losing the gas on the compression stroke. Of course a leaky exhaust valve does not affect the next or exhaust stroke, for it is its duty to be open. Leaky piston rings have the same effect and an added trouble of allowing the lubricating oil to be forced past the piston; this aids the carbon formation. Leaky piston rings are caused by natural wear, both of the rings and of the cylinder walls. When carbon forms in behind the piston rings, they become fast in the grooves of the piston. This causes them to stick out and wear unevenly. When a ring does not expand due to sticking, it leaves an opening between it and the cylinder wall which allows the leakage. There are other causes for loss of compression, but they are less likely to happen than the ones mentioned. Some of these are—leaky cylinder head gasket—improperly timed valves—scored cylinders—and poor grade of oil.

Testing For Compression

To test the engine cylinders one at a time, put on the starting crank and open the pet cocks on top of each cylinder, except the one you are to test first. Turn the engine over, and on the compression stroke of that cylinder you should feel a good springy resistance—that is, the flywheel should react back in a springy manner. If it fails, then take off the crank case and hole plates. Try it again and listen for a hissing sound at the bottom of that cylinder.

If you hear one, it means that the rings leak. Try this same method for ring leaks on all cylinders, then test for valve leakage, and remember that most compression trouble is due to valve leaks. By removing the intake and exhaust manifolds, and listening at each opening for a hissing sound, the troublesome ones can be easily found, though with the writer it has always been found best to go over each valve lightly with grinding compound and make their tightness sure. Test around the gaskets, such as spark plug, and valve cap seats, or cylinder heads, by squirting oil around them while the motor is running. If they leak the oil will bubble or be drawn in.

Some of the chief causes of this trouble are use of low grade fuel, poor lubricating oil, or improper carburetor adjustment (generally found to be too rich a mixture). Carbon is the residue of burned fuel and oil, and when the engine has operated for a fair length of time the inside of the combustion chamber, as all the space above the piston is called, becomes gradually coated. The longer the motor is used, the heavier becomes this collection or deposit. In addition to the liability of the troubles mentioned, carbon (if allowed to go too long without removing) causes preignition, overheating of the motor, and the pounding or knocking sound that always accompanies an overheated engine.

Massey-Harris

The Harrow that Pulverizes

The Massey-Harris Disc Harrow thoroughly cultivates the soil, pulverizing it into those fine particles which make a seed bed like a garden. Being equipped with Pressure Springs, the Gangs are held to their work on rough and uneven ground, on ridge, and in furrows, so that the entire surface is cultivated. No other implement is as valuable in the preparation of the seed bed as the Massey-Harris Disc Harrow.

The Improved Spring Pressure Device not only ensures the Discs being kept at work in rough and uneven land, but also saves the driver and team from jolt and jar, and saves the machine from breakage when striking obstructions.

The Bearings are provided with Removable Bushings of Oil-Soaked Hard Maple and have Screw Compression Grease Cups.

Low Hitch takes all the weight from the horses' neck.

The Gangs are flexibly mounted on the the ends of the Arch and readily conform to uneven surfaces of the ground. One end of either Gang may rise to pass an obstruction while the balance of the Harrow remains at work.

The Angle of the Gangs is readily controlled by a single, easily-operated Lever.

It is strongly built so as to stand the severest strain of discing, and give long service.

The No. 8 has Twelve, Fourteen or Sixteen 16-in. Discs, and the No. 9 has Twelve, Fourteen or Sixteen 18-in. Discs.

See one at the nearest Massey-Harris Agency

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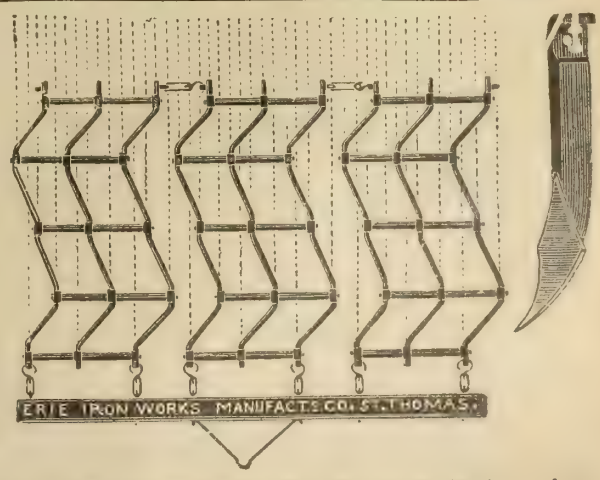

3 Section Complete $25.00

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Erie Lance Tooth Harrow is the finest and most useful article that can be placed on a farm. The teeth are so shaped that they tear rough ground and culivate and make the finest seed bed possible. Once used on a farm, and it will be the last implement parted with. Made strong and adapted to the roughest usage. Supplied in sets of 2, 3, or 4 sections, 15 teeth to a section. Each section covers 3 feet of ground in width.

MANUFACTURED BY THE ERIE IRON WORKS LIMITED, ST. THOMAS, ONTARIO

Why Grow Culls
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Six Steps to Good Potatoes:

1.—Provide Root Room.
2.—Control Soil Moisture.
3.—Use Good Seed of Best Variety.
4.—Spray to control insects.
5.—Select disease-free stock and spray to control blight.
6.—Provide the Crop with abundance of suitable plantfood.

That a plentiful supply of Potash is necessary for best results in fertilized Potatoes is shown in the result of a 3-year test by Maine Agricultural Experiment Station.

Analysis of Fertilizer Used			Yield
Ammonia	Phos. Acid	Potash	Per Acre
5%	8%	0%	275 bus.
5%	8%	2%	306 bus.
5%	8%	8%	321 bus.

The Dominion Experimental Farms Found:—

1 acre potatoes unfertilized yielded 75 bus.
1 acre potatoes fertilized and manured yielded 200 bus.

This is an increase of 166% over the unfertilized. Practically the same labor was involved to prepare ground, cultivate and spray the 200 bushels crop as was needed for the 75 bushels crop.

What they Say:

"A study of the average returns from five stations is most interesting and reveals the fact that, without a single exception, fertilizers were profitably employed. . . . In vegetable growing the comparative yields from heavy manuring combined with chemical fertilizers corroborated the work of previous years in showing that larger yields and earlier maturity can be obtained at much less cost, by a combination of chemical fertilizer with manure, than by the application of manure only."

—Dominion Experimental Farms Report, 1918

Big yields, good quality, high percentage of marketable potatoes are produced by proper soil preparation and abundant, suitable fertilization.

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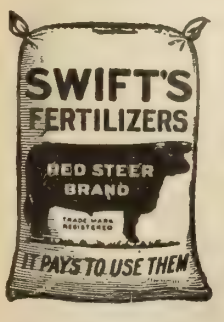

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FRUIT GROWING

LARGE ORCHARDS OR SMALL

By Prof. J. W. Crow

IT is possible to distribute the labor over a long season and at the same time to include a very desirable measure of diversification without going outside the field of fruit growing. Some of the most successful fruit growers produce a general line of fruits, including apples, pears, plums, cherries, strawberries, raspberries, currants and gooseberries, and, where climate permits, peaches and grapes as well. In fact, it seems that where it can be worked out completely or in part, this scheme is likely to be more satisfactory than any other. It reduces the risks consequent upon putting all the eggs in one basket; it distributes the labor over a wide range of season and it utilizes to the full the special knowledge, special skill, and special machinery of the grower. A crop which several growers are using in connection with fruit is asparagus and it works in well with any special fruit crop or any combination of them.

Dairying does not seem to offer much opportunity for any line of fruit growing, except in a small way, and the same is true of general farming. The small apple orchard in the hands of some men is useful as a cash crop side line, but a permanent fruit industry can never be built up on this basis. The fact that some growers do well out of small orchards indicates nothing so plainly as that this same grower would make a much larger profit if his orchard were larger. The cost of production per box or per barrel is so high in the small orchard that ultimately it will have to drop out of the competition.

Hogs seem to go along with dairy cattle and seldom work in satisfactorily in any number upon a fruit farm.

Beef cattle go well with larger apple orchards or with general fruit growing, and provide winter employment besides valuable supplies of stable manure. Where a good market for hay exists, this will be found to combine well with apples and with other tree fruits, excepting cherries.

Asparagus and peaches make an excellent combination for high priced land in suitable districts, and there would seem to be many other cases in which asparagus could be used to advantage.

Poultry on a large scale does not seem to work out well with fruit growing. The reason is that poultry keeping is in itself a well-balanced scheme, with continuous, steady employment the year round.

THE BALDWIN APPLE IN ONTARIO

IS the Baldwin apple doomed in Ontario? In introducing the question of varieties at the recent Ontario Fruit Growers' Convention, Prof. Crow told of the fatalities to many orchards from winter-injury, especially after the hard winter of 1917-18. One grower in Norfolk Co. planted 1,500 Baldwins in 1913, and now has not over 600 of them living. Other growers told about similar winter killing, many attributing the trouble to winter killing in the nursing.

Although there are many old Baldwin trees scattered over all parts of Ontario, the majority of these old trees are now getting past their best bearing. Younger trees do not seem to be so hardy.

Elmer Lick of South Ontario contended that the Baldwin was shorter-lived on light soils, but lived well on heavier soils where little cultivation was given for 50 or 60 years. He had made the most of his apple income out of Baldwins.

James E. Johnston of Simcoe said that he had 15 years ago advised extensive plantings of Baldwins because it had been a great yielder and a money-maker. To-day he would have to revise this and plant other varieties.

Mr. Watson, a retired farmer, said that he had planted Baldwins out on his farm in Oxford 45 years ago and these trees were bearing well yet.

Prof. Caesar would leave the Baldwin alone, as we must pay more attention to the soils best suited for it and pay more attention to soil treatment. Baldwins will not stand too much good treatment, said R. W. Grierson the President. He had an old Baldwin orchard planted 70 years ago and had stimulated them by good attention, so that they are mostly dead now.

MAKING TREES BEAR ANNUALLY

THINNING has nothing to do with annual bearing of the apple tree, said a prominent speaker at the Fruit Growers' Convention.

What is the experience of our readers in this matter?

ROME BEAUTY IN ONTARIO

IN every fruit store in our cities and towns will be found boxed apples at this time of the year that are very attractive. The leading apple now is the Rome Beauty grown in the North-Western United States. This apple has been planted at Ottawa by the Experimental Farm and already some have fruited, says Prof. Macoun. The fruit is nearly as large as the imported fruit, but is hard. Mr. Maycock, of Wentworth Co., has planted a large acreage of these fancy Pacific Coast apples. They are growing fast, especially the Winesaps, but as yet none are bearing. Mr. James Johnston says that these apples will not yield as well as they do in the West. Mr. Dempsey says that the Winesap and Jonathan are grown in Northumberland County, but that they are too small for commercial work.

PROFITABLE VARIETIES

"I BELIEVE the Rhode Island Greening is the most profitable apple that is grown in Canada," says Prof. Crow. "It is the best all round money-maker, is a hardy tree, seldom winter kills and is always in demand."

Prof. Crow would advise plainly the following apples for a commercial orchard: Duchess, Alexander, Wealthy, Snow, Greening and Northern Spy.

The Delicious apple has a very hardy tree, says Prof. Crow. Mr. Graham of Grimsby has two Delicious apple trees bearing and they have much the same quality of the apple on the other side.

THE APPLE GRADER

WM. GIBSON of Newcastle, Ont., says that he used the apple grader last year in his big orchard and found that it did not give him entire satisfaction at first. He laid it by for awhile, but afterwards came back to it and decided to make a test to see whether it paid or not. He checked up the men's work for one week and found that it cost him 30c a barrel to handle the apples, while he used the grader the next week and found the cost to be 23c bbl., so he decided to keep the grader at work after that. The grader is exceptionally good in handling Ben Davis apples.

PROF. CHANDLER *of the College of Agriculture at Ithaca, New York, whose work on fruit subjects is widely known, holds some real ideas on the matter of fruit tree pruning. His observations have led him to believe that the pruning of young apple trees delays fruiting. His address provoked some considerable discussion at the Ontario Fruit Growers' annual meeting. Some of the leading points in the discussion will be given in the next issue of* FARMERS' MAGAZINE.

APHIDS ON APPLE TREES

IN Ontario there are four different kinds of aphids which attack the apple. But there are only two of these which give us any real trouble and they are the green apple aphids and the rosy aphids. When you see a small cluster of deformed apples near the centre of the tree, which apples do not attain any very large size, you may know that this is the work of the rosy aphids. These aphids also exude a honey dew, upon which grows a fungus which spreads unto the apple and is known as the black, sooty fungus. To treat these four aphids one should delay the first application of spraying until the buds are about to burst. Then spray the usual spray, adding black leaf forty or nicotine to the solution.

TRACTORS AT GUELPH

THE following firms exhibited tractors at O.A.C. during the Farm Power Course at Guelph, from Jan. 28th to Feb. 8th: Gilson, Beaver, Waterloo Boy, All Work, Cleveland, Titan, Case, Heider, Happy Farmer, Avery, Emmerson-Brantingham, Moline-Universal, Massey-Harris.

GUELPH TRACTOR SHORT COURSE

By Prof. W. H. Day

THE average attendance at this Course was 220 and thirteen tractors were exhibited. We had thirteen practical exercises also. The class was divided into twenty-six groups and the exercises and tractors were rotated round the groups so that when the course ended every man had an hour and a half on each practical exercise and the same on each tractor. When a group would go to a tractor the demonstrator of that machine would spend the first half of the period in showing the principles and fine points in connection with the machine and during the last half of the period each man in the group was given an opportunity of handling the tractor for a few minutes.

DISTRIBUTION OF TOBACCO SEED

A SAMPLE of choice seed, in ¼ ounce packages, of one of the following varieties of tobacco: White Burley, Warne, will be sent free to any tobacco grower of Southern Ontario who applies for same to the Tobacco Division, Central Experimental Farm, Ottawa, before the end of February. This quantity of seed is sufficient to sow 150 square feet of seed bed, and to plant one acre and a half.

The supply of seed being limited the growers desirous of securing seed should send in their application at an early date, as all requests will be classified in the order received.

No applicant will be supplied with more than one sample of seed.

FARMERS' GRAFTING WAX

ONE of the best kinds of grafting wax to use on the orchard, is made as follows: Resin 4 parts by weight; beeswax 2 parts; tallow 1 part. Melt together and pour into a pail of cold water. Then grease the hands and pull the wax until it is nearly white. Heat it before using if it is too hard.

Another, and one more pliable, is made by taking resin 6 parts by weight; beeswax 1 part; boiled linseed oil 1¼ parts.

Mary had a little cold
That started in her head,
And everywhere that Mary went
That cold was sure to spread.

It followed her to school one day,
There wasn't any rule,
It made the children cough and sneeze
To have that cold in school.

The teacher tried to drive it out,
She tried hard, but, ker-choo!
It didn't do a bit of good,
For teacher caught it too.

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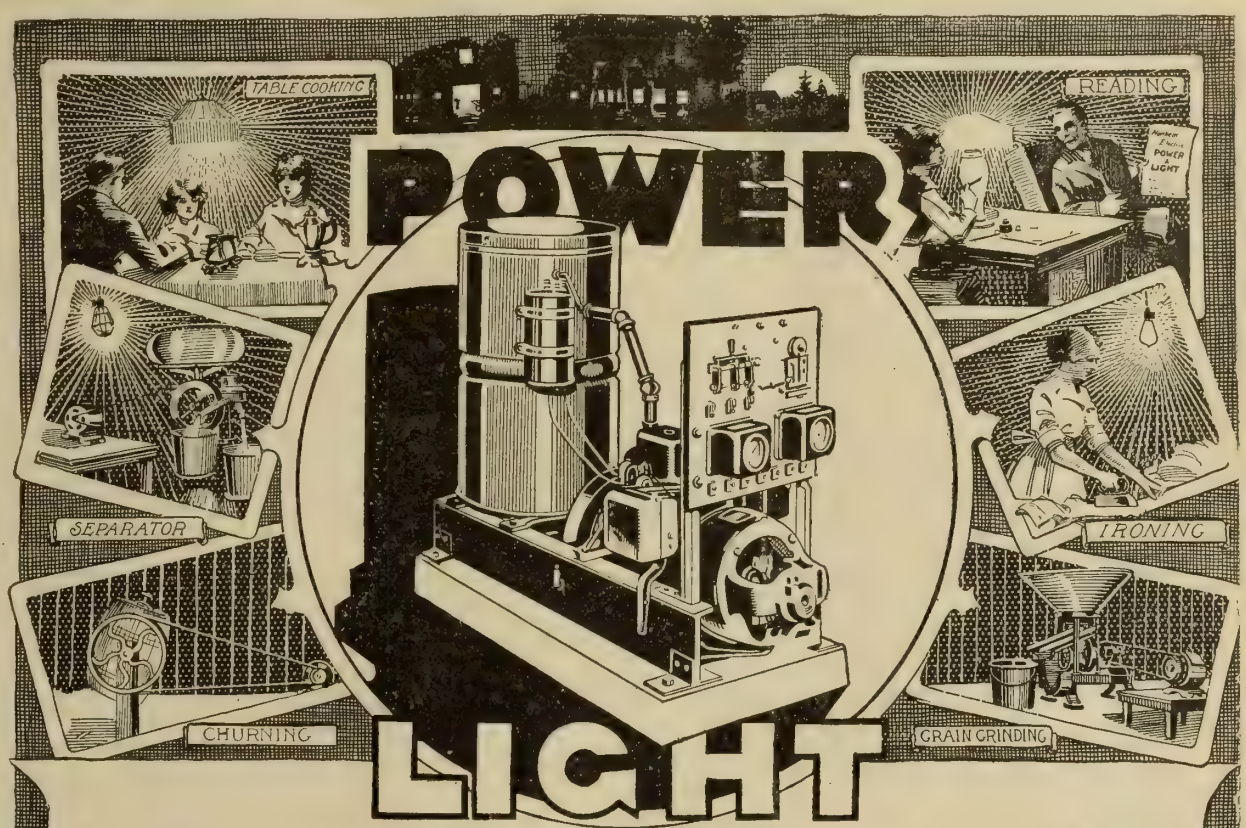

As Sure as the Sun Sets in the West so Sure will you Need Electricity on the Farm

APART from altering international boundary lines, the war has shown farmers how to concentrate; how to devote their time and energy to oig and important things. But what about the little jobs? Somebody has to do them; to turn the cream separator, churn, grindstone, grain grinder, saw wood, pump water, etc. These are the chores that the

***Northern Electric* POWER and LIGHT**

will do for you. Jobs that take muscle and time from the big end of farm work. Then, too, there is the domestic side of farming. Electricity in the home means wholesome freedom from many daily drudgeries. It will run the washing machine, iron, vacuum cleaner, sewing machine, operate the toaster and many other electric household utensils. It will flood your house and outbuildings with a safe, bright, clean and economical light. No oil lamps or lanterns to bother with.

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YOU BETTER KNOW THE TRUTH about this wonderful SEED CORN and our other SEEDS and SEED GRAINS before sending your order for your needs for this season to anyone.

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WHEN THE FARMER GROWS SWEEPSTAKES HE HAS THE FACTS WHEN HE FEEDS IT

TRUCK FARMING

Onion Culture in Canada

By C. C. EIDT

COMMERCIALLY the onion is probably the most extensively grown vegetable in the world. Due to its adaptability to almost every climate it may be grown almost anywhere. The onion crop in North America amounts to about 20,000,000 bushels of onions annually, which alone shows its great importance. In addition to this crop onions are grown very extensively by market gardeners and in almost every backyard garden as green bunch onions, and in California and Ohio as onion sets, mostly to supply the demands of amateurs.

Onions are always in demand in the larger cities. This crop has never been grown so extensively as to cause a glut on the markets, and for this reason the grower is sure of a market with a fair price for his onions; this ranges in ordinary times from 50c to 80c a bushel for Northern grown varieties such as Prizetaker and Southport Yellow Globe. Yields of onions are large, usually running from 300 to 1,000 bushels per acre. From 500 to 700 bushels per acre is considered a good crop. Onion crops under average conditions net a profit of from $75.00 to $500.00 under exceptionally favorable conditions. The cost of production ranges from about $80.00 to $200.00 per acre, according to various estimates.

The following figures give a pretty good idea of the net value of an acre of onions:

Expenses	
Prep. of seed bed....	$ 12.00
Cost of seed.....	8.00
Fertilizer	20.00
Cutivation	15.00
Harvesting	15.00
Topping	10.00
Marketing	40.00
Barrel and Crates ..	40.00
Total	$160.00
Returns	
700 bus. at 80c a bus.	$560.00
Less expenses	160.00
	$400.00

These figures are only estimates, but are fairly accurate, and show that there is real profit in onion culture as a field crop. Onions pay if grown properly.

A small motor garden tractor used by F. B. Housser, of Pickering, Ont., in his onion crop last year. He had an onion grader and topper as well.

The Best Soil For Onions

The soils best adapted to onion growth must necessarily be very rich when a crop of 700 bushels is to be harvested. To supply this richness requires a soil with plenty of fertilizer in it. For several reasons, however, a soil which is too heavy must not be selected. A light soil is low in fertilizer content and is liable to dry out in the summer quickly, reducing by this the yield of onions very materially. A heavy soil, such as a heavy clay, is sticky and slow to heat up in the spring. Onions must get an early start so that a soil which warms up earliest in the spring is best. Dark-colored soils heat up very quickly, and for this reason muck or peaty soils are often selected. They are usually loose and retain soil moisture to a great extent. They supply a large quantity of decaying organic matter which is highly important to onion culture. Their chief fault usually is in acid condition, which must be remedied by the application of lime. Where peaty or muck soils cannot be obtained, a sandy loam without stones makes the best soil. Such soils usually need irrigation, however, especially in localities subject to drought. The overhead system finds favor with most modern growers. As onion seeds and sets wash out very easily, a level seed bed is necessary. The ideal soil is a rich, friable, dark-colored soil, well drained and flat yet retentive of soil moisture.

Preparing the Soil

In the preparation of the soil for onions, a very fine seed bed is necessary. If a sandy loam is used for the first time, a crop of some nitrogenous plant should be grown and plowed in the year before the crop is to be grown. In the same fall a heavy manuring should be plowed in. Twenty to thirty yards of good, well-rotted stable manure per acre is best for this purpose. If this is not procurable about 1,000 pounds of commercial fertilizer must take its place, applied in the spring. In spring, as soon as the land is fit, it should be plowed and harrowed until the time of seeding. To procure a level seed bed, a drag should be used, especially where a hand seed drill is to be used. The drag breaks up the lumps and tends to work the earth into the furrows. To avoid lumps the fertilizer must be well pulverized before application.

A rotation of crops is very necessary to procure the greatest yield of onions, and thus keep down the losses caused by insect pests and diseases that are prevalent among plantations. Onions are shallow-rooted, and a hoed crop immediately preceding the onion crop keeps down the weeds and tends to improve the mechanical condition of the soil. Celery, spinach, beets, corn or potatoes make profitable crops to precede onions.

Onions need very heavy applications of fertilizer. A crop of 500 bushels of onions will remove about 40 pounds of nitrogen from the soil, 13 pounds of phosphoric acid, and 30 pounds of potash. The best manure to supply all of these is stable manure, which must be well rotted and of fine texture so that no lumps are left in the soil. Where stable manure is procurable, 25 to 40 yards of it will be good application. This excels commercial fertilizers in its improvement of the mechanical condition of the soil. As a dressing, while the crops are growing commercial fertilizers should be used. Where barn-

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yard manure is not procurable, commercial fertilizers are used instead. Two thousand pounds of these fertilizers is not too heavy an application. A good mixture to supply required fertilizer, which should always be in excess of the actual demands of the plants, would be:

Superphosphate .....750 lbs.
Nitrate of soda ..350-450 lbs.
Muriate of potash ....400 lbs.

Nitrate of soda varies as to quantity. If early maturity is desirable, more of the nitrate should be used. 200 pounds of this mixture per acre makes a suitable dressing for young plants.

Sowing and Transplanting

There are two methods of growing onions; one is by sowing "black seed" in the field, and the other by transplanting the young plants into the field. Transplanting has its advantages. It hastens maturity of the bulb by about four weeks for an early crop. It eliminates the necessity of thinning and there is always a tendency to select only the strongest plants when they are set out. It takes less seed. This method has its disadvantages however. About twenty standard cold frames are necessary for each acre of crop, which is additional expense. The *labor required to transplant the onions is enormous* when it is considered that to set out an acre takes 175,000 plants on the average. Most commercial men plant seed.

In sowing a field of onions, only the best seed should be used, and that of a variety to suit the climate. A germination test will determine how thickly the seed should be sown. From four to six pounds per acre is sufficient for the best yields. Four and one-half pounds of good seed is sufficient. The seed should be sown to a depth of from one-half to three-quarters of an inch, and is usually sown with a drill or hand drill in rows about fifteen inches apart. Thinning should be practised at the first weeding. One to two and a half inches is far enough apart in the row. Seeds are sown eight to twelve to the linear foot.

The onions for transplanting are grown in hot-beds usually, and are planted from six weeks to two months before they are to be set out, or in the earlier days of March. The seed is sown thickly in a standard hot-bed, 7 in. by 6 ft., in drills 2 in. apart. The young plants are kept above freezing temperature at all times until danger of frost is past, when they are hardened off by exposure to evening conditions and then set out as needed in the field. The field should be first marked off and then boys used for setting out the plants. One boy makes a hole with a dibble; the next sets a plant in place, and the third firms it with a dibble. The young plants should be set at the same depth as they were in the hot-bed.

Cultivation consists of keeping the soil loose and friable, and free from weeds. The earth should be kept with a mulch of about one inch at all times. Wheel hoeing is the best method for maintaining this condition, and should be done about once a week or after each rain. Thinning should be done at the first hoeing, and for this purpose an onion hoe or various thinning knives may be used. If the onions become thickened or "thick-nosed" they should be rolled with a light roller, which breaks over the tops and checks growth. The food of the stem becomes stored in the bulb. This usually has to be done about two weeks before harvesting. Irrigation systems pay for themselves when summer drought occurs.

Harvesting the Crop

In the harvesting of onions great care is necessary not to bruise the bulb. In large fields it should be done as soon as the tops begin to turn yellow. They should be either pulled by hand or hoed out by a special trough-shaped hoe, and then raked into windrows, about five to eight ordinary rows making one windrow. This must be done gently with a wooden rake so that the onions will not be bruised. About eight to ten days of good drying weather is sufficient to cure

Continued on page 35

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PIONEER HINTS

By CHINOOK

A CANADIAN-AMERICAN who has five nephews in our Expeditionary forces in France writes me regarding a plan he has formed to establish these boys on the land upon their return to civilian life. He says, in part:

"The Government allows each returned soldier to take a soldier claim and a civilian claim. There would probably be in our party two or three people who would be entitled to a civilian claim only, but in all we would want to secure about three sections of land. Naturally, we would want prairie land or at least land requiring the minimum amount of clearing. I have seen the past generation of our family finish a life of land-clearing in Ontario."

I fear that our inquirer would have difficulty in finding in Grande Prairie three whole vacant sections of desirable land within any distance of steel that he would entertain, but if the party have to spread out a little they may in time be able to consolidate by sale and purchase. Settlement has been extending in a very wide circle.

To avoid going too far back from steel a party such as the one mentioned might have to take land with a considerable percentage of scrub. This need not deter them so long as the growth is poplar and providing there is on each homestead sufficient open land to prove up and get started on. Fire and time will rid the land of poplar, but be careful of willow. It deceives every newcomer. It might be added that our best grazing occurs in thin scrub or brule; and moreover, the time is coming when the man who preserves some bush will find himself in possession of an asset.

I might add that *I believe the big heavy tractor plow will prove the economical solution in breaking our scrub land* and a party like the one under consideration could invest in nothing more profitable, once they were settled and had a chance to size up the situation. It would be unwise to order before.

* * * * *

The pioneers of Eastern Canada cleared their land by co-operating in logging bees. Modern pioneers should adopt their example by co-operating in the purchase of powerful tractors to break up their scrub and semi-scrub lands. It beats "grubbing" by a long shot. Life is too short to perform with backache, perspiration and elbow grease *what machinery can do more cheaply.*

* * * * *

The average settler striking out for a new country feels as though he must take along with him a caravan of stock, implements, tools, clothing, grubstake and so on. In many instances those things could be purchased on arrival more cheaply (and more closely adapted to his requirements) than they cost him to lay down at his door. If he is not certain of his precise destination and perhaps has to risk exposure at steel head or hire shelter and buy food, the chattels are liable to become a costly encumbrance. As a rule it is better to go in "light." The best thing to take is a check book backed by a bank account representing about half one's capital, the balance being in the form of life insurance, first mortgages, Victory bonds or something which cannot be too readily cashed in. It is liable to be needed worse and expended more wisely in two or three years time. I have hesitated somewhat about writing this paragraph at all for fear that some families might act upon it to their detriment. Cash is such a soluble asset that it runs away all too easily when one feels flush after a closing-out sale and begins spending without brakes on. Even those who are abstemious in their personal habits find it easy to throw money around when travelling or looking for a new location. Dozens of outlays then seem justifiable which might, with a little inconvenience, be foregone; and if one is at all inclined to be reckless he may squander funds that will be sorely needed as working capital or even as living later on. For this reason it is best for most of us to postpone sales of land or chattels until we are definitely located in the new home and then make a bee line for it ere the liquid assets have leaked away or evaporated.

* * * * *

It is possible for a lone bachelor or a solitary family to lose himself or itself on a homestead almost as completely as in the trackless wilderness so far as social intercourse is concerned. The writer is not one of those who would do their farming in suburban subdivisions but he would hesitate long before plunging into pioneering alone in a strange community. With two or more congenial families located together and ready always to change work or implements, risks, hardships and inconveniences are mitigated.

* * * * *

Let not the winter pass without getting a good pile of wood sawn and split—at least sawn—to carry the wife through the coming summer. I have tried about all ways of providing fuel, even to carrying blocks into the house to saw during a prolonged cold spell in order to "keep the homefires burning," and am convinced with my neighbors that the most expensive way of all is to saw and split a few armfuls of wood at a time as needed. Especially is this true in summer when it either becomes a burdensome extra chore impinging upon one's rest, or else whittles a slice off the effective working hours of every day, often necessitating the team standing idle while the teamster sweats over the saw horse. Most of the farmers in our neighborhood now buzz a year's supply of wood in the autumn, and during the ensuing winter get out a big pile of poles to be buzzed the next fall at the close of the threshing season. This gets the job over and out of the way and the work though strenuous is enjoyable and companionable, in sharp contrast to solitary and irksome manipulation of a bucksaw. It is getting so that we can scarcely hire a man to buck wood. I don't blame the men either. We are becoming Bolshevistic enough to recoil from the doing by hand of tedious, time-marking jobs which machinery can expedite, lighten and render tolerable—even enjoyable. Of course many new settlers have neither the funds nor the available equipment to buzz their wood. Under those circumstances one can tackle the wood pile with a bucksaw or crosscut and do it cheerfully with good grace. No man of gumption shrinks from any necessary task. Whatever the method, by all means have a woodpile ready for the spring.

* * * * *

After a period of increasing scarcity, which almost reached the point of extinction, the prairie chickens are coming back. A couple of years of legal protection, backed by the cheerful co-operation of nearly all settlers, has accomplished this. Every morning this winter a flock varying in number from fifteen to thirty have been strutting and chirping around our buildings picking up stray grains and helping themselves to stacks of "green feed." Unmolested, they are growing quite brave, sometimes almost mingling with the domestic fowl.

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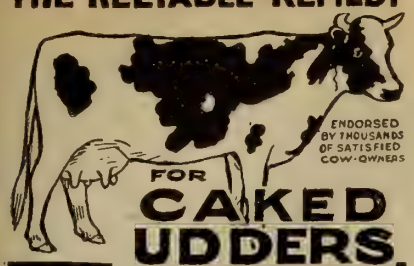

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POULTRY

THE CORNISH MAKE-UP

By A. P. Marshall

"BUT just lift it and see what a solid carcass that bird really has." That is a common way, for one who knows the breed, of conclusively stating that everything in sight is weight on the Cornish. Just an immense frame of distinct type with a few hard, close feathers and you have the Cornish makeup.

Quite a number of breeds were used in making the result possible. In England, the Dark Cornish has been brought to its present state, while the other two varieties, the White and White Laced Red, have been perfected in America.

Anyone knowing the type of Cornish could not mistake it for any other breed. The ristinctive characteristics are the pea comb, large thighs and specially thick legs, the short tight plumage, the very broad breast of considerable depth, the immense width of back at the shoulders, the comparatively short neck and prominent brows. The Cornish is probably the nearest approach to the heavy muscular type as the English bulldog is in the canine family, but the Cornish has the upright habit of the game, carrying the shoulders very high and the stern very low. The legs are carried very wide apart, the thighs almost having the appearance of being fastened on the outside of the wide shoulders. The Cornish has the appearance of being set to defy anything.

The dark and white Cornish should weigh as follows: cock, 10 lbs.; cockerel, 8 lbs.; hen, 7½ lbs. and pullet, 6 lbs. The White Laced Red has not been bred to the weight of the others and should make: cock, 8 lbs.; cockerel, 7 lbs.; hen, 6 lbs. and pullet, 5 lbs.

In the Dark Red the markings are gorgeous on the male and beautiful on the female. On the male the head and neck are a lustrous greenish-black with red shafting on the neck. The wings are a combination of red and greenish-black. The fronts are greenish-black, the bows red and black with more of the black. Coverts form a lustrous greenish-black wing bar. The long wing feathers are black with lower edgings of bay. The back and saddle are red and greenish-black. In the back the red is only in small proportion.

On the saddle the proportion of red is greater. The remainder of the feather can be described as black, with green in evidence on spots showing lustre. The undercolor is dark slate.

The female is quite different. She has a lustrous greenish-black head. The neck is also black on the upper portion with shafts of bay. The front of neck is bay or mahogany, each feather having two black pencillings following around the outside of the feather.

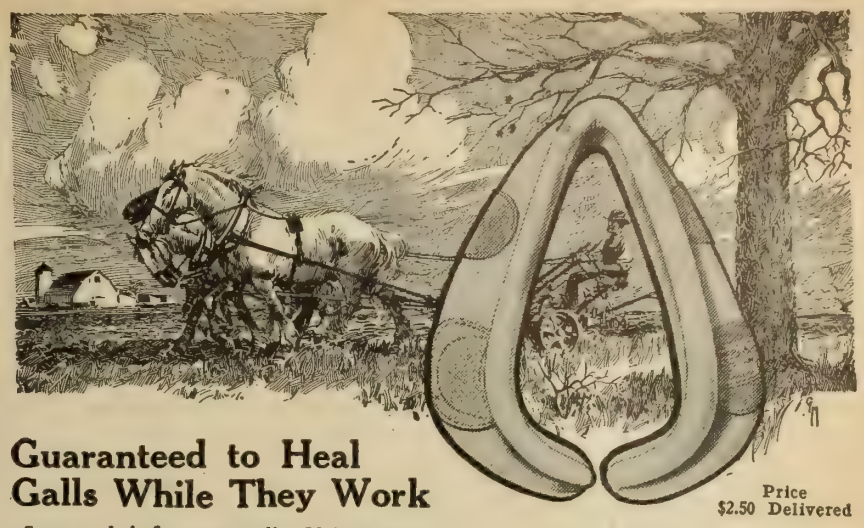
The balance of the bird is mahogany bay, having the distinct irregular double pencilling on almost all parts. This combination makes a very pleasing result and is therefore quite attractive.

On all Cornish the beaks and legs are yellow, the eye is yellow, approaching pearl, and the comb, face, wattles, and the ear lobes are bright red.

The White Cornish must be pure white throughout.

The White-Laced Red is a striking and unusual combination of color. Roughly the plumage is bright red laced or edged with white. The tail is white. For an odd combination of substantial merit no more pleasing selection can be made than the White-Laced Red Cornish, although on account of the comparatively few bred it might be difficult to locate stock readily.

Considerable is claimed for the Cornish as a utility breed. Most certainly they have a solid carcass and doubtless lay quite well. With their big thighs and compact wide breast and beak they dress up into a meaty looking product, and one who likes the type will find them capable of furnishing, good return for proper treatment.



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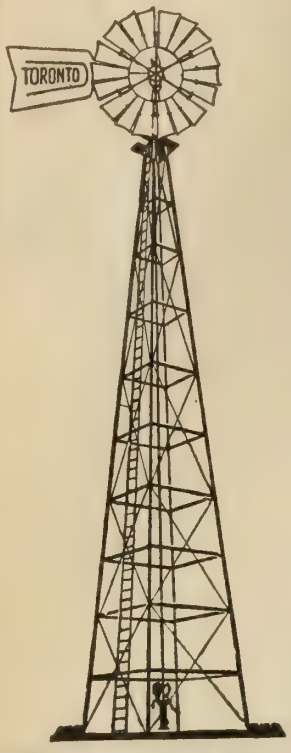

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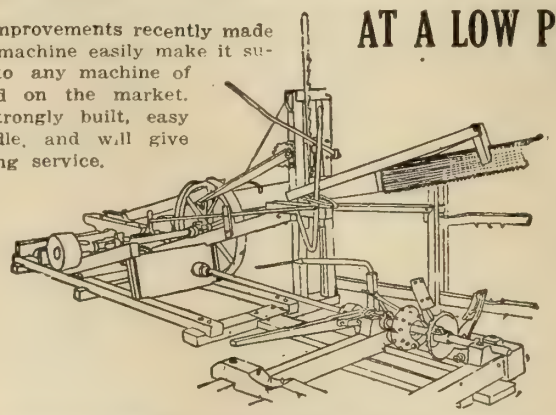

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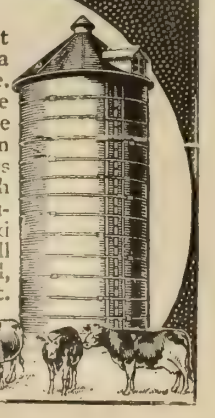

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Continued from page 11

the number of shares held by him. In this way the company is effectually protected from exploitation by capitalists.

The financial status of the company is amply safeguarded. In the first place, all charges for operation and maintenance must be met, and also all moneys due and payable to the Government under the Act, or under any contract or agreement must be paid over. These are made a first charge on the company's business. If after these charges have been met there remains any surplus at the close of the financial year, the company may pay a dividend of not more than ten per cent. to each shareholder whose shares were allotted prior to the first day of April in such financial year. Any balance remaining over may be disposed of by setting apart fifty per cent. of such balance to the Elevator Reserve Account, and paying the remaining fifty per cent. in patronage dividends or in certain other specified ways.

Local and Terminal Elevators

The company has now in operation some 300 elevators at local points throughout the province. It also owns a terminal elevator at Port Arthur at the head of the lakes, having a frontage on the harbor of 500 feet, and a depth of 1,500 feet, with space for a capacity of 10,000,000 bushels, which can be utilized as trade develops. Its present storage capacity is 2,500,000 bushels, while the storage annex has a capacity of 2,000,000 bushels. The company also owns a hospital elevator at Port Arthur, which is expected to be ready for occupation during the present month, and which has been erected at an estimated a total capacity of 650,000 bushels, and cost of $530,000.00. This elevator has is specially adapted for the treatment of off grades of wheat, mixed grains, oats, barley, flax, and for the cleaning of grains. It has direct connection with the C.P.R. and the Canadian National Railways, and it has also its own drying plant by means of which it is capable of extracting five per cent. of moisture from 500 bushels of grain per hour. Since the company was incorporated in 1911 the number of elevators has increased from 46 to 298, the amount of grain handled from 3,262,426 bushels to over twenty-seven million bushels, and the profits from $52,461.60 to $124,811.28, which latter was the profit made in the financial year just closed.

The balance sheet as at July 31, 1918, showed assets amounting to a total of $4,563,293.67, with liabilities including, of course, paid up capital, unclaimed dividends, reserve funds, etc., amounting to $4,438,482.39, showing a profit of $124,811.28 as previously stated.

Interesting Features

One of the features of the company's business which is deserving of mention is that of special binning, which has been of particular benefit to farmers. By this method they are able to preserve the identity of their wheat, thus making sure of getting a proper grade, and this class of business constitutes about two-thirds of the business of the company. Another feature is that as time passes and the business of the company increases it is becoming more and more easy to control the practices of the grain trade, and to keep up the level of prices the farmers receive for their grain. A third feature of interest is that the company has recently instituted a fund for the insurance of their employees against accident and death, and this fund stood in the latest balance sheet at $12,360.80. The head office of the company is in the Farmers' Building, Regina, and there are at present employed by it in all a total of nearly 500 persons.

What the S. G. G. A. is Doing

A still later development is the Co-operative Wholesale Department of the Saskatchewan Grain Growers' Assn. Ltd., which was established in the year 1914 as a result of a decision of the Annual Convention held in February of that year in the city of Moose Jaw. During the first year only two or three commodities were handled, but their range and value have so increased that by the year 1916 the department had a turnover of $1,058,000, a considerable portion of this being transacted in co-operation with the Grain Growers' Grain Co., now the United Grain Growers Ltd. Since that time, however, the S. G. G. A. has conducted its business independently, and in 1917 was able to record an increase of nearly 60 per cent. over that of 1916, the total sales in 1917 amounting to $1,643,000, on which there was a net profit of $35,776.58 after making allowance for every contingency. The association is doing an extensive business in all kinds of farm supplies, including groceries, clothing, farm implements, barb wire and fencing, building materials, twine, coal, apples, and many other commodities. At the time of writing the figures for 1918 are not available, and while the amount of trade done during the past year cannot at present be stated, it may be said that there is a substantial increase over the year 1917

How Capital is Raised

The method of raising trading capital differs from that adopted by the two organizations previously dealt with, this being accomplished by two distinct methods. The first method is by means of capital debentures, which are issued in two denominations. The debentures of the first denomination are of $25 each, and are issued to individual members of the association, and those of the second denomination are of $125 each, which are sold to incorporated locals of the association and to other affiliated bodies. The individual debentures draw upon the trading department for at least six per cent. per annum before any patronage dividend may be paid. They form a permanent investment unless redeemed by the Central Association. They are issued to all members who apply for them, and there is no limit to the number a person may hold. Debentures of the second denomination are sold on terms of five equal annual payments of $25 each, and patronage dividends are applied against any except the initial payment, which must be in cash, with the reservation that until a local has subscribed for debentures amounting to not less than $500, no amount greater than twenty per cent. of the face value of its debentures may be applied thereon from the profits of any one year. This policy has been adopted as a means of building up the capital of the association, as it was felt that so long as the association is in urgent need of money with which to develop its business all profits must be retained and applied against the unpaid portions of the capital debentures. In this way it is possible for a local, after making the initial payment on its capital debentures, to complete the payments by means of its patronage dividends, which amounted in 1917 to 1½ per cent. of the purchases made by locals during that year.

The second method of raising capital is by means of life membership in the association. The fee for life membership is $12.00. Of this amount $2.00 is retained by the organization department, the remaining $10.00 being loaned at interest to the trading department, to be used for trading purposes.

Notwithstanding these methods of raising capital the control remains in the hands of the whole of the members. Representation at meetings is based on the membership of each separate local; and not on the amount of capital invested in the association, while the profits are distributed in proportion to the amount of business done through the Central. Beginning less than five years ago with a capital of $1,000, the working capital at the end of 1917 amounted to the sum of $85,000.

Co-operation in Livestock and Wool

During the last few years the co-operative shipping of livestock and wool under the direction of the Department of Agriculture has undergone considerable development. With regard to livestock efforts are being made to extend the scheme to the whole of the 400 or so registered co-operative associations in the province, and to organize additional districts for the marketing of livestock. During 1917, 35 associations marketed co-operatively about 550 carloads of

livestock to the value of $1,050,285, while, during the year 1918, 50 associations shipped 800 cars of an approximate value of $1,527,536.

The advantages of this plan are that it eliminates all speculation; the producers get exactly what their animals are sold for at the central market, less the actual cost of transportation and marketing; while the small producer is able to sell to as great advantage as the the stockman who sells a car-load or more. The system also eliminates the expense of a travelling buyer, as the farmers tributary to any shipping point can unite to make up car-load shipments, these being shipped to a central market by the secretary of the local association, who keeps a full record of all animals received, and mails a cheque to each shipper on receipt of the market returns, less his proportionate share of the actual marketing expenses.

The wool shipped co-operatively from the province during the past year amounted to 294,000 pounds, valued at 61½ cents per pound, giving a total value of $242,310. This wool was shipped by 916 shippers as against 623 in 1917. By this method farmers have gained about ten cents per pound on the average, while the prices received are considerably higher than would have been the case if no such scheme had been in existence. The mere fact of this method being in operation has a tendency to increase returns also on wool which is shipped by the ordinary channels of trade. In this way the benefits of co-operative trading extend even to those who remain apart from the movement, and thus tend to raise the economic status of the whole people in those districts where the system is put into operation.

JAPS BUY HOLSTEINS

A news report from Wisconsin states that Geo. J. Schuster of Oconomowoc, Wis., has recently sold three members of his Holstein herd to Y. Kurihara of Yokahoma, Japan, the purchase price being $2,700.00. Mr. Kurihara came as a special representative of the Japanese Government in whose interest the cattle were purchased.

PROTECT THE TREES

Trees and shrubs occasionally require pruning, but hogs, horses and cattle are poor workmen to employ on that task. As a rule, trees and shrubs should be grown where certain protection can be afforded against stock. Even the house cat has been known to kill young trees by scratching the bark.

An attractive home lot will do more to increase the valuation of the farm than the best ten-acre field on it.

ONION CULTURE IN CANADA

Coninued from pge 31

onions. The onions should be turned every few days and kept covered with a straw mulch to protect them from the sun. Topping is usually done in the field by hand; this is a better method than using a topping machine, which to some extent bruises the bulbs.

Onions should be stored as soon as they are ripened. They may be kept in two ways, either by freezing or by keeping them at about 40 degrees F. and not allowing frost to get at them. In either case they should be kept on racks in a well-ventilated shed, and packed in layers about six inches to eight inches deep. They should be placed on straw in the rack to prevent them from bruising. If they are to be frozen, they should not be allowed to freeze until the weather is cold enough to insure a steady frost. Otherwise they should never be allowed to freeze at all, as freezing and thawing ruins them.

Onions are usually graded for marketing according to their size. Primes are larger than 1¼ in. across; seconds three-quarters to one and a quarter inches, and picklers are less than three-quarter inches. Grading is usually done with sieves and they are then marketed in a great variety of boxes, baskets, barrels and crates.

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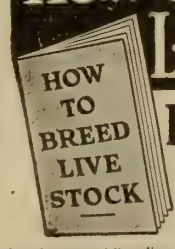

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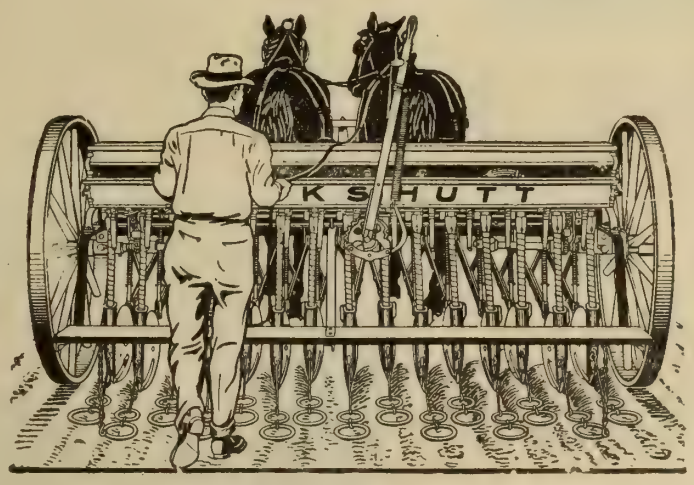

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FARM BUILDINGS

Pasture Comfort in Dairy Stable

By STUART IRVINE

THE dairy stable as we see it to-day is entirely a different one from that of from ten to fifteen years ago. Farmers of that time were not in a position to fit up their stables with such equipment as may be obtained at present. As years passed and men of a mechanical turn of mind appeared, labor-saving and sanitary devices were invented, placed upon the market, and the result is—we have from forty to fifty per cent. of our barns equipped in a thoroughly scientific manner. *It is a well-known fact that the cow is a very sensitive animal and will respond very readily to comfortable and sanitary surroundings, and to kind treatment.* She has the power of withholding her milk and diverting her energies to the protection of herself against unsanitary and uncomfortable surroundings.

Walls, Foundations and Floors

First of all let us consider the walls. Undoubtedly the best material to construct a wall is dressed lumber and felt. For a cold climate a double wall is necessary, while in warmer climates a single wall will suffice. The foundation should extend below the frost line and be set on firm soil. The best material to construct the foundation of is concrete of a composition of about three to one. Most foundations are built from twelve to sixteen inches in width, this, of course, depending upon the size of the beam to be laid upon the concrete. A good deal of different opinion has risen as to the best material of which to construct a floor. Plank floors are cheap, fairly warm, but hard to clean; cement floors are more expensive, easily cleaned but sometimes cold. The most satisfactory procedure, doubtless, would be to cork brick the floor, but expense plays a large part in this practice.

Lighting, Artificial and Natural

It has been proved that a harmful germ cannot live more than fifteen minutes in the presence of sunlight. At once we see the very great importance of letting the maximum amount of sunshine into the stable to destroy disease germs which thrive in dark barns. For the sake of most effective lighting, the stable should run north and south. The long rows of windows will thus receive the direct sunlight which is most powerful in destroying disease germs; at least four square feet of window space should be allowed for every animal. Windows should be flush on the inside to prevent the accumulation of dust, and placed at a distance of about four feet above the floor. When dairy barns are built of one storey only, monitor roofs may be used so that the light may enter by the roof as well as the sides. The modern method of lighting a building artificially is by electricity. Where hydro is not available, a current may be secured through driving a dynamo by a gasoline engine. An outfit for lighting the house and cow stable will cost about $370.00 with an annual cost of around $21.00. When setting up the wires throughout the stable, it is good practice to encase them in galvanized piping to further insure the safety of the building against fire.

Why So Much Tuberculosis?

John Jones had a dairy cow, he fed her well, he gave her lots of water to drink, but she was always a boarder, never paid a profit and by-and-by she had to be killed for tuberculosis. Why was this? His cow didn't secure sufficient oxygen to supply her lungs and respiratory system with pure blood to keep her body in a healthy and vigorous condition, and she contracted tuberculosis. Ventilation means the taking in of fresh air and the removing of foul air and moisture. The amount of the latter exhaled by a cow amounts to about twelve quarts in twenty-four hours. In cold weather, when there is poor ventilation in a stable, this moisture freezes on the walls and windows of the stable. When a warm spell comes, this moisture melts and leaves the stable in a very damp condition.

The two main systems of ventilation are the King and the Rutherford. Each has its advantages and disadvantages, but most people are in favor of the Rutherford because it is simpler and more adaptable to cold climates. This system provides for the intake of air through the wall near the floor and the exit of foul air near the ceiling. The temperature of the stable may be largely regulated by the closing and opening of the intakes and outlets, according to weather conditions. Each cow should have at least 600 cu. feet of air space to live comfortably in a stable the temperature of which is from 45° to 50° Fahr.

Placing of Cows

A very important question, which arises when designing the stable, is the placing of the cows, whether to place them with their heads facing an alleyway running lengthwise in the stable, or the reverse. There are advantages and disadvantages with each method.

Advantage of having two cows arranged with heads facing in:

1. The light falls on the hind end of the cow and not on her head.
2. It is easier to feed along a central

A Commercial Dairy Shed With No Loft.

passage, as the feeding of both rows can be done at once.

3. The ventilation outlet can be placed in the centre of the stable above the alleyway.

Advantages of having cow's face toward the walls:

1. Cleaning, milking and three quarters of the work is done behind the cows.
2. No danger of breathing in another animal's face.
3. The farmer can drive through the stable and clean both rows at once.

So you see that the placing of the cows rests entirely upon the judgment of the farmer and the general layout of his stable.

Stanchions, Gutter, Stalls and Mangers

Gutters are usually built from 14 in.-16 in. wide with flat bottoms. If they slope away from the stalls the cows are liable to slip backward and seriously sprain the limbs. However, the gutter should bear a slight slope from one end to the other to allow the liquid manure to flow in this latter direction. Here a drain is set in the cement to allow the escape of the liquid contents, so as to facilitate cleaning. The size of the stall depends upon the breed of cow, but the average length runs about 4 ft.-5 ft. and the width 36 in.-48 in. Mangers are constructed of plank, concrete or sheet steel. Concrete is cheaper than steel, is the most modern and most satisfactory manger that a farmer can build. It can be cleaned easily, and it possesses this one great property of sanitation, no disease germs can procure shelter in a properly constructed manger, as they can in wood. Mangers must be continuous and sloping towards one end, with a drain at this end to allow the escape of any water which may collect in the manger.

The most sanitary and up-to-date way of tying cows is with the swinging steel stanchion. Tied in this manner she cannot go forward into manger, nor back into the litter, her head is given sufficient liberty to move around and lick herself

Maternity Stalls and Bull Pen

In all dairy stables there should be at least two maternity stalls and a bull pen. The former are best situated where most sunlight reaches them and in a warm section of the stable. To prevent a male animal from getting cross and vicious, he must be in sight of the cows. A successful dairyman has stated recently that he has never had a cross bull since he remodelled his stable and made provision for the proper stabling of the herd sire.

Litter Carrier, Milk Carrier and Feed Carrier

In modern dairy stables, when more than six cows are kept, a litter carrier is invaluable, as a great deal of time and hard labor is economized. The track may also be used for running a milk carrier in large stables. In front of the cows a second track is laid for the overhead feed carrier to run on. Any of you who have had to carry feed from one end of a long stable to the other will at once realize the great number of steps saved in this respect.

Water System, Milking Machine Attachments

Another important factor in a leading dairy stable is the water system. As to the question of installing a milker, opinions differ and various circumstances present themselves. For commercial purposes, where 20 or more cows are kept, a milking machine, if properly handled, is a good investment. Many farmers use a milker for 10 cows. For those who carry on test work hand milking is usually resorted to.

In the outfitting of a dairy stable, plainness, smoothness and simplicity are the points to strive for, and only by following out these principles can a man ever hope to have the stalls and mangers in a sanitary condition. In the winter care and management of dairy cattle, the two words Pasture and Comfort should present themselves to the practical dairy man.

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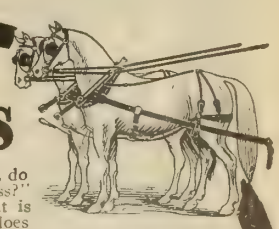

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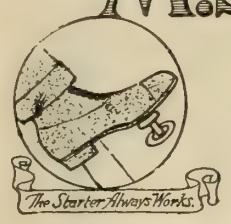

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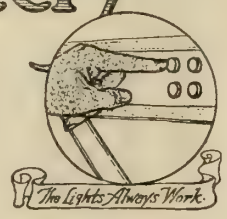

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RURAL MAIL

ENGINE TROUBLES

IN scanning the "Rural Mail" column of your issue of February 1st, "Engine Troubles" answering queries by J. H. W., Ontario, caught my eye and I read it. Answer No. 1 is in the writer's opinion radically wrong on all points. Black smoke never comes from too much lubricating oil—that causes blue smoke. In a properly constructed engine black smoke with either gasoline or kerosene indicates too rich a mixture, but the gasoline smoke is blacker than that from the kerosene. Indeed the latter might better be called dark-gray. White smoke from a kerosene burning engine indicates that the engine is not running hot enough to vaporize all the kerosene and some of it is being driven out through the exhaust in the form of a mist—if you were to put kerosene in a tea-kettle and boil it you would see a cloud just above the spout, as with water, but that cloud would be much whiter, or rather a light-blue, and much more dense than the water cloud. It might be necessary with that engine to heat the kerosene as well as the air, besides running the engine hotter.

Water does not play havoc with fuels unless present in too great quantities. Perhaps 90 per cent. of the kerosene burning engines use water along with the kerosene. There are some which do not however, and I believe that when we get kerosene burning right there will be no need for water. In the present state of knowledge of burning kerosene water is beneficial in most cases.—Prof. W. H. Day.

WHO INHERITS THE PROPERTY?

B. J. C., Ontario.—If a farmer dies leaving a wife, father, mother and two sisters, and he has no will, how is the estate divided?

Answer.—By the laws of Ontario, $1,000 goes to the wife, and half of the residue to the wife and the other half goes in equal shares to the father, mother, and sisters. So that if the estate is valued at $3,000 after all expenses are paid, the wife gets $1,000 and another $1,000, making $2,000 and the father, mother and two sisters get $250 each. If there is real estate involved, the wife can elect to take dower of one-third life interest in the real estate owned by her husband.

HEIFER WON'T BREED

J. L. W., Ontario.—I have a pure-bred Shorthorn heifer that is two years and eight months old, that has not yet showed any signs of oestrum.

What could I give her or what would you recommend me to do to bring her in oestrum?

What is a good remedy to kill lice on cattle?

Answer.—I do not see that medicine of any kind would be of any benefit to this animal. I can only suggest that you have her examined by an obstetrician, one who has given some time to the study of sterility.

Remedy for lice. Be careful not to let it be eaten as it is poison:

R Hydrarg. Perchlor .....1½ drams
Amon. Chloride .....1 dram
Aqua add to ..... 24 ozs.
Ft. Lotio

Clip or wash animal and apply lotion two or three days in succession. This will kill eggs of lice as well as live lice.

RUN DOWN MARE

D. F., British Columbia.—I have a twelve-year-old mare which is badly run down in flesh. She eats ravenously, and has a greatly distended appearance, caused, I think, by the large amount of roughage she eats.

She works fine if not kept at heavy work too long, but on a ten or twelve mile trip with a load, she plays out and has to stop frequently to rest.

I had her teeth fixed, and fed her International Stock Tonic, but it had no apparent effect. I have not seen any sign of her having worms.

Answer.—I would like to enquire whether your mare drinks to excess as well as eating to excess. It may be diabetes. I would recommend that you clip her all over, clean thoroughly, give her a mild physic, change the food, putting her on to bran mash for at least one-third of grain ration, and procure the following medicine for her:

Pulv. Ferri Sulph., 2 drams; Pulv. Soda Bicarb., ½ oz.; Pulv. Digitalis Folia, 1/3 dram; Pulv. Potass. Nitrate, 1 dram; Pulv. Fenugrec, M., F. and Pulv. Mitte Salis XXIV.

Sig. Give one morning and night in soft food.

Blanket mare according to weather conditions and give only a reasonable amount of roughage or hay.

RUNNING EYES

E. D., Ontario.—I have a calf two months old and its eyes run water continually, have tried bathing them with warm water, but without any effect. Could you advise me to anything else?

Answer.—It seems probable that both Lachrymal ducts are obstructed, no doubt of congenital origin, but you may try for a few days the following prescription:

Zinci Sulph., 2 grains; Ac. Boracic 40 grains; Aqua Dist. add to 2 ozs. After bathing with warm water put a few drops into the eyes three times daily using an eye dropper.

If no benefit is derived from treatment get a Veterinary Surgeon to examine the case.

MARE NOT WELL

E. O., Alberta.—I have a mare about nine years old not thriving. She stamps vigorously while in the barn and bites at her stomach. I have been feeding her well, and working her a little. Can you tell me what is wrong with her? She seems very dull. What shall I give her?

Answer.—Your information regarding mare is rather scant and indefinite. However, I would advise that you have mare clipped, and then washed, especially the legs, with soap and water with a little disinfectant added, then give her a dose of purgative medicine following with some worm medicine applying to the legs or itchy parts the following solution once daily for three days, longer if necessary:

R Hydrarg. Perchlor., 1½ drams; Amon. Chlorid., 1 dram; Aqua add to 4 ozs.; apply a little once daily to itchy parts.

Give mare a change of diet, and keep her blanketed and comfortable.

ARE THESE BONDS GOOD?

M. D. D., Ontario.—Do you know of the National Security Corporation Company of Toronto? Would it be wise to invest money in it?

Answer.—See answer to L. T. on page 50, November 1st issue of FARMERS MAGAZINE where the whole question is discussed by the editor of *The Financial Post.*

DONKEYS WANTED

J. A. R., Sask.—Where can I purchase 12to 30 small burros (donkeys) suitable for children to ride? 1½ to 3 years of age, say 11 Jennies and 1 Jack.

Answer.—We are not aware that there are any donkeys for sale in Canada. Shetland ponies are more popular here. Note Mount Victory Pony Stud advertisement on page 61, Feb. 15 issue. Any subscribers having knowledge of the whereabouts of donkeys may notify us.

"ROYAL PURPLE" STOCK AND POULTRY SPECIFICS

Your hens will lay lots of eggs Winter and Summer

Under the most severe weather conditions you will get plenty of eggs if your hens are properly housed and fed.

"Royal Purple" Poultry Specific

In summer fowl get grain, herbs, grass and insects which are Nature's assistants for producing eggs. In the winter and spring, fowl get practically the same grain, but must have a substitute for the herbs and insects. Royal Purple Poultry Specific, manufactured from roots, herbs, minerals, etc., is a most perfect substitute, increases the egg production at once, and makes the hens lay as well in winter as summer—keeps the fowl active and free from cholera and kindred diseases. Sold in 30c and 60c packages, also in $1.75 and $6.00 air-tight tins.

Secure More Milk From Your Herd

You can increase the flow of milk from 3 to 5 lbs. a day by using.

"Royal Purple" Stock Specific

Mr. Norman G. Charlton, Scott, Sask., states:

"I am from Ontario and fed your Royal Purple Stock Specific when in Bowmanville. My cows made the largest average and tested 5 pounds over average at G.M.P., Brownsville. I believe you make the best conditioner on the market."

The great farm animal conditioner and fattener is used in almost every progressive stock-raiser's stable in Canada. Good for all stock in a run-down condition. Can be used occasionally or continually without showing bad after-effects. Royal Purple Stock Specific is purely a digester and blood purifier. It aids digestion to such an extent as to produce the very best results, and obtain the maximum amount of good from the food eaten. It will enable you to fatten your steers and hogs a month earlier, thereby saving a month's feed and labor. Royal Purple Stock Specific is put up in 60c packages and large $1.75 and $6 tins. Secure our products from our dealer in your town.

This pure-bred Holstein bull calf was raised by L. H. Lipsit, Straffordville, Ont., and took first prize in his class at the Western Fair, and also took first prize for the best pure-bred Holstein bull raised on **"Royal Purple" Calf Meal.**

"Royal Purple" Calf Meal Reduces the Cost of Feeding Calves 75%

When calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk.

Mr. Geo. W. Collins, Plainfield, Ont., writes:

"Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and fed them nothing but your Calf Meal and water, and say they are doing well on it as they did on the whole milk."

This Baby Food for young animals is partially predigested, and can be fed to the youngest animals with perfect safety. IT WILL NOT cause stomach or bowel trouble, which seriously affects the health of young animals, Royal Purple being a sure preventive for scouring.

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

"Royal Purple" Lice Killer

Gets Rid of Them Quick

Percy Prewer, Cross Creek, N.B., says (in a letter of Aug. 7th): "I have used your Lice Killer on a cow that was badly infested with lice. It soon rid her of them."

W. L. Carlyle, Reid's Mills, Ont., (says in a letter of May 18th): "I cannot do without it, as it is the best we have ever tried without a doubt, both for cattle and fowl."

Try it, Mr. Farmer, and see for yourself. Secure "Royal Purple" Lice Killer from our dealer in your town. Should there not be any, write us.

Manufactured by

The W. A. Jenkins Manufacturing Company
LONDON, CANADA

We also manufacture the following valuable remedies for stock and poultry:

Royal Purple Cough Cure for horses, 60c tins.
Royal Purple Liniment for man or beast, 60c bottles.
Royal Purple Disinfectant, 30c, 60c, $1.15 tins.
Royal Purple Worm powder for animals, 30c packages.
Royal Purple Roup Cure, 30c tins.
Royal Purple Colic Cure, $1.15 bottles.

By mail, 10c extra.

USE THIS COUPON

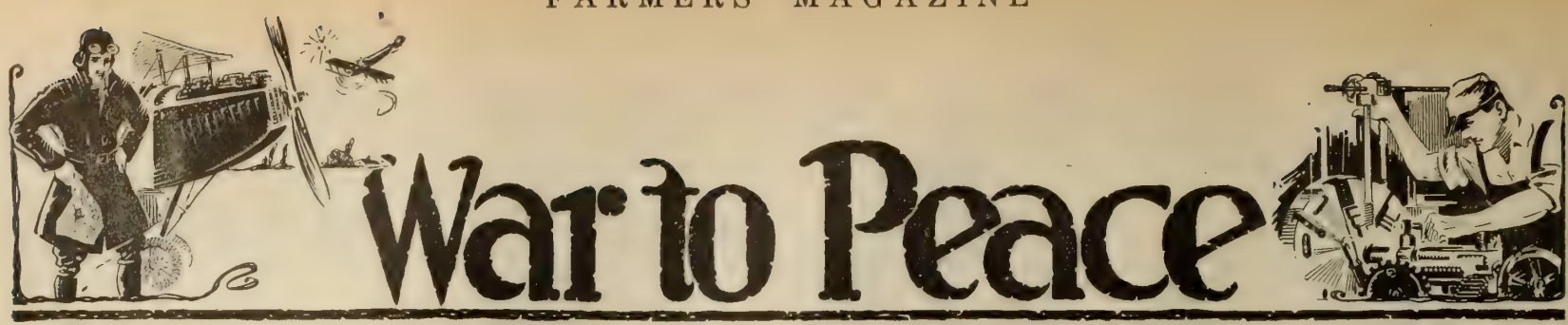
The W. A. Jenkins Mfg. Co., London, Canada.

Gentlemen:

Please send us your Free 80-page booklet describing all common diseases of stock and poultry and telling how to build hen-houses, also how to raise calves without milk.

Name .....

Address .....



Building a NEW Canada

Canada's farmers can look with pride on their share in the nation's war-effort.

But there is still important work for every farmer to do. Canada must be brought forward to a peace basis with all speed. Here are ways in which the farmer can help:—

Canada's first need to-day is to create more wealth. The farmer should, therefore, in the nation's interests no less than in his own—continue to bend every effort to increase production.

To-day the farmer will quickly secure the help he needs for getting out bigger crops. The Public Employment Offices now being established in cities of 10,000 population, will put him in touch with just the help he needs.

Every farmer can try to give employment to a returned man or perhaps in addition give him practical training and knowledge of farming, so that he will be able to take advantage of the Government's Land Settlement and Loan provisions.

To-day is the time when every farmer can do great public service by creating work—clearing land, building new barns and outhouses, and doing what is necessary for greater production.

The Farmers' Clubs should make a point of giving a royal welcome to every soldier returning to their community.

Farmers' Co-operative Organizations, too, should do their utmost to employ returned soldiers—especially those who have had experience in handling commodities in the Army Service Corps.

A new Canada is being built up—a Canada that must be still bigger in spirit, still more enterprising. This thriving, prosperous Canada can only arise through the vigorous help and intelligent co-operation of every citizen.

The Repatriation Committee

OTTAWA

CHEAPER THAN A WHIP AND BETTER FOR YOUR HORSES

A horse with bruised, galled and chafed neck or shoulders can't earn his feed. Whipping only increases his suffering. You can prevent such injuries for less than the price of a good whip. Equip your faithful animal with Tapatco—The pad made with our

NEW PATENTED HOOK ATTACHMENT
(Found Only on Pads Made by Us.)

Consists of wire staple with felt washer. It gives hook a firmer hold and prevents pulling off, even though fabric is weakened by long usage. Life of pad is thus materially lengthened. This is the greatest improvement since we invented the hook.

STUFFED COLLAR PADS
Filled with our Special Composite Stuffing

are better than other kinds. They are soft, springy, absorbent and serve as a guarantee against bruised, galled and chafed shoulders.

THIRTY-SEVEN YEARS MAKING PADS
Look for the Felt Washer
SOLD BY DEALERS EVERYWHERE

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Pat. In U.S. Dec. 1, 1914
Pat. In Can. Apr. 6, 1915

The American Pad & Textile Company, Chatham, Ontario

Don't Keep Your Car Near Your Barn

Cars have taken fire on the road—and they are liable to do so in your barn and cause destruction to your buildings and their contents. PLAY SAFE, keep your Auto a good distance away.

THE AUTO HOME GARAGE

Built in sections of wood or metal clad. Painted and Glazed complete. So well designed that it can be erected in a very short time.

Built in Five sizes. Surprisingly low in price.

Write for Booklet and Particulars

A. COATES & SONS
Manufacturers
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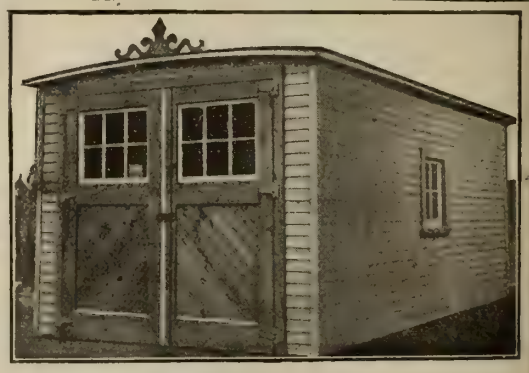

USE STONE'S FERTILIZERS

Write to-day for FREE Illustrated Literature showing what Stone's Fertilizers have done for others and directions for using. Agents wanted where not represented.

Manufactured by

WM. STONE SONS, Limited

Head Office: WOODSTOCK, ONT. Factory: INGERSOLL, ONT.

1919 Co-operative Wool Sales

Ontario Sheep Breeders---market your wool this year through the Provincial Association Sale at Guelph

In 1917, the first year that wool was sold through the Association, some 300,000 pounds were sold from 1,416 shippers at record prices for Ontario. *In 1918,* over 750,000 pounds were sold, from 3,845 shippers, again at record prices as shown by table below. It will be noted that all grades of wool including rejects and tags averaged net to the seller (not including freight and membership) 65½c per pound. All grades (excepting rejects and tags) averaged 68 1-3c per pound. All grades (except tags, rejects and 100,000 lbs. of coarse wool) averaged 70c per pound.

A World Wide Market

As this wool will be sold through the world-wide facilities of the Canadian Co-operative Wool Growers, Limited, which in 1918 sold 4½ million pounds of Canadian wool for the various provincial associations, the large and effective selling machinery at the disposal of the Ontario wool grower who ships his wool to the Ontario Sheep Breeders' Association at Guelph, will be readily noted.

For 1919--- let us double the figures again and make it 1,500,000 pounds

Study these Co-operative Wool Sale Figures

Grades of Ontario wool	American fixed price on scoured basis	Estimated average per cent shrink of Ont. wool	American price per pound f.o.b. Boston for Ont. grades	Selling price obtained by Ont. wool growers	Net price to Ont. wool growers with 3½c selling charges deducted
Med. Combing	[illegible]	[illegible]	74.2c	74½c	71c
Med. Combing	1.37	46½%	73.29c	73½c	71c
Low Med. Combing	1.28	44½%	71.01c	71½c	71c
Low Combing	1.17	44%	65.72c	67c	65c
Coarse Combing	1.07	44½%	59.[illegible]c	60½c	59c

What the Selling of Wool According to Grade Means

It is true that in the past years gave a flat price for wool, the growers of coarse wool sometimes obtain a higher price than the market demands would warrant. It will be readily seen, however, any average price paid for any commodity must be such that the loss on a lower grade of article must be made up by a profit on a higher grade. Therefore, it is evident that the growers of fine wool, in selling at a flat price, sacrificed a certain portion of the true value of their wool in order that the growers of coarse wool might receive a price higher than their grade of wool would warrant.

The Co-operative selling of wool by grades is intended to put the wool trade on a proper basis and give each grade its true market value. It should, moreover, be borne in mind by the wool grower that co-operation has brought the price of wool up to a level which it could not have attained if co-operation had not been employed, and herein lies the secret of the reason the flat price paid by some buyers had to be somewhat above the true market value of coarse wool. It must also be remembered that the grower of coarse wool benefits by the greater weight of coarse wool fleeces in comparison with fine.

The first and primary object of selling wool on a graded basis must always be kept in mind and that is that all wool shall be properly graded according to the market demands and that each grade shall be sold upon its merits and that the growers of wool shall receive the true market value of their product. Only when this object has been attained will the marketing of wool be on a satisfactory basis. It is, therefore, evident that the principle underlying co-operative marketing of wool is sound and beneficial to growers, and it is to their mutual benefit to stand together and sell their wool on a graded basis through their own provincial association.

The development and prosperity of the industry depends entirely upon the united efforts of individuals engaged in raising sheep and in order to obtain this united effort, it is clear that if every sheep raiser in the Province were a member of the Ontario Sheep Breeders' Association, the best results could be accomplished. This Association, through its officers and directors, has influenced legislation for the protection of sheep and are constantly endeavoring to protect the sheep owner, and this is why a small membership fee is deducted from each shipper's returns for his wool.

Plan Under Which Wool Will be Marketed by the Ontario Sheep Breeders' Association For 1919

1. Application forms may be obtained from the representative of the Department of Agriculture in your county or from the secretary's office, Parliament Buildings, Toronto, and should be filled in and returned at as early a date as possible.
2. Wool will be received at the Winter Fair Building, Guelph, between May 1st and July 15th, 1919.
3. The fleece should be placed with the clipped surface down. Then fold in the sides and roll from each end to the centre, after having carefully removed the dung locks, and then tie with paper wool twine. Never tie fleece with sisal or ordinary binder twine, and avoid tying with neck portion. The dung locks should be placed in a separate sack from the fleeces.
4. The fleeces should then be packed in wool sacks, or in case of small shipments of 15 fleeces or less, use ordinary jute bran sacks, being certain the inside surface is clean.
5. Each shipper's wool is to be sent transportation charges collect, to R. W. Wadé, Winter Fair Buildings, Guelph, Ontario.
6. An advance cheque will be sent to each shipper immediately after the wool is graded, this cheque will represent as nearly as possible the appraised value of the wool, less a margin to cover freight; membership; handling and selling charges. A cheque for the balance due each shipper will be sent as soon after the completion of sale as possible.
7. Membership fees will be deducted from proceeds of wool as follows: For those having 15 fleeces or less, 50c. For all those having 16 fleeces or more, $1.00. The latter class of members will be supplied with wool sacks, and all shippers supplied with paper wool twine after they make application.

The shipper is assured of the highest price obtainable in the world's markets less only the following expenses:

1. Selling charges by the Canadian Co-operative Wool Growers, Limited. These selling charges are actual costs only but cannot be stated exactly at this time. Last year they amounted to 1¼c per lb. Any shipper can find out what they are likely to be, however, by writing to his District Representative before shipping.
2. Transportation charges to Guelph.
3. Membership fee to the Ontario Sheep Breeders' Association.
4. Actual charges for handling and grading, supplies, printing, sacks, twine, labor, etc., which will all amount approximately to 1c per lb.

In sections where a number of shippers can combine their shipments in a car lot, it will effect a saving in freight and cartage. The Association has a siding direct to the Winter Fair Bldg., Guelph.

The Directors of the Ontario Sheep Breeders' Association are: J. D. Brien, Ridgetown; James Douglas, Caledonia; E. Robson, Denfield; J. E. Cousin Harriston; W. H. Beattie, Wilton Grove; Cecil Stobbs, Leamington; George L. Telfer, Paris; James Bowman, Guelph; H. M. Lee, Highgate; W. Whitelaw, Guelph; J. W. Springstead, Abingdon. The Officers are: President, George L. Telfer, Paris; Secretary, R. W. Wade, Parliament Buildings, Toronto, Ont.

Fill in this Coupon—clip it out—and mail it to-day

Mail it to your District Representative or to R. W. Wade, Secretary, Ontario Sheep Breeders' Association, Parliament Buildings, Toronto.

Dear Sirs—Please send me Application Form for Ontario Sheep Breeders' Association Wool Sales at Guelph.

Name .....

Address (in full) ..... County .....

Farmers' Magazine

The Ontario Department of Agriculture

Parliament Buildings, Toronto

Hon. George S. Henry, Minister of Agriculture

ONTARIO

MONARCH FLOSS : MONARCH DOWN

THE MONARCH KNITTING COMPANY, LIMITED, DUNNVILLE, ONTARIO, CANADA

ALSO MANUFACTURERS OF MONARCH-KNIT SWEATER COATS AND MONARCH-KNIT HOSIERY

Members of The Audit Bureau of Circulations

FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto, Montreal, Winnipeg

VOL. XII, No. 6 MARCH 15, 1919 $1.50 Per Year 10 Cents Per Copy

More Horsepower

for Your Money, both in First Cost and Upkeep Cost

THE price of the Happy Farmer Tractor is less than that of any other standard machine of 12-24 horsepower. This is due to light weight and simple construction. But at the same time, it delivers more power on the drawbar than other tractors with a similar sized motor and speed.

The Happy Farmer Tractor does all the work any other machine can do with greater ease, and less attention is needed to keep it in order. That is the beauty of having the light weight, powerful and scientifically designed Happy Farmer Tractor.

KEROSENE MOTOR—The Happy Farmer Motor is designed not only specially for kerosene, but to get the last ounce of power. Our short intake manifold permits not a bit of condensation. So perfectly is the engine designed that, after starting, it runs like a watch, without smoke or carbon.

Gears and transmission run in a bath of oil, thus wasting least power between the motor and the final drive, and giving more power at the drawbar. The upkeep for parts is economical. As there are fewer wearing parts there are fewer parts to replace.

Can you afford to go on sowing five acres of horse feed per horse for your animal power when the Happy Farmer will save you this expense, and do your work quicker, better, easier and cheaper? Write for free literature.

The Renfrew Machinery Co., Limited

Agencies almost everywhere in Canada

Head Office and Works

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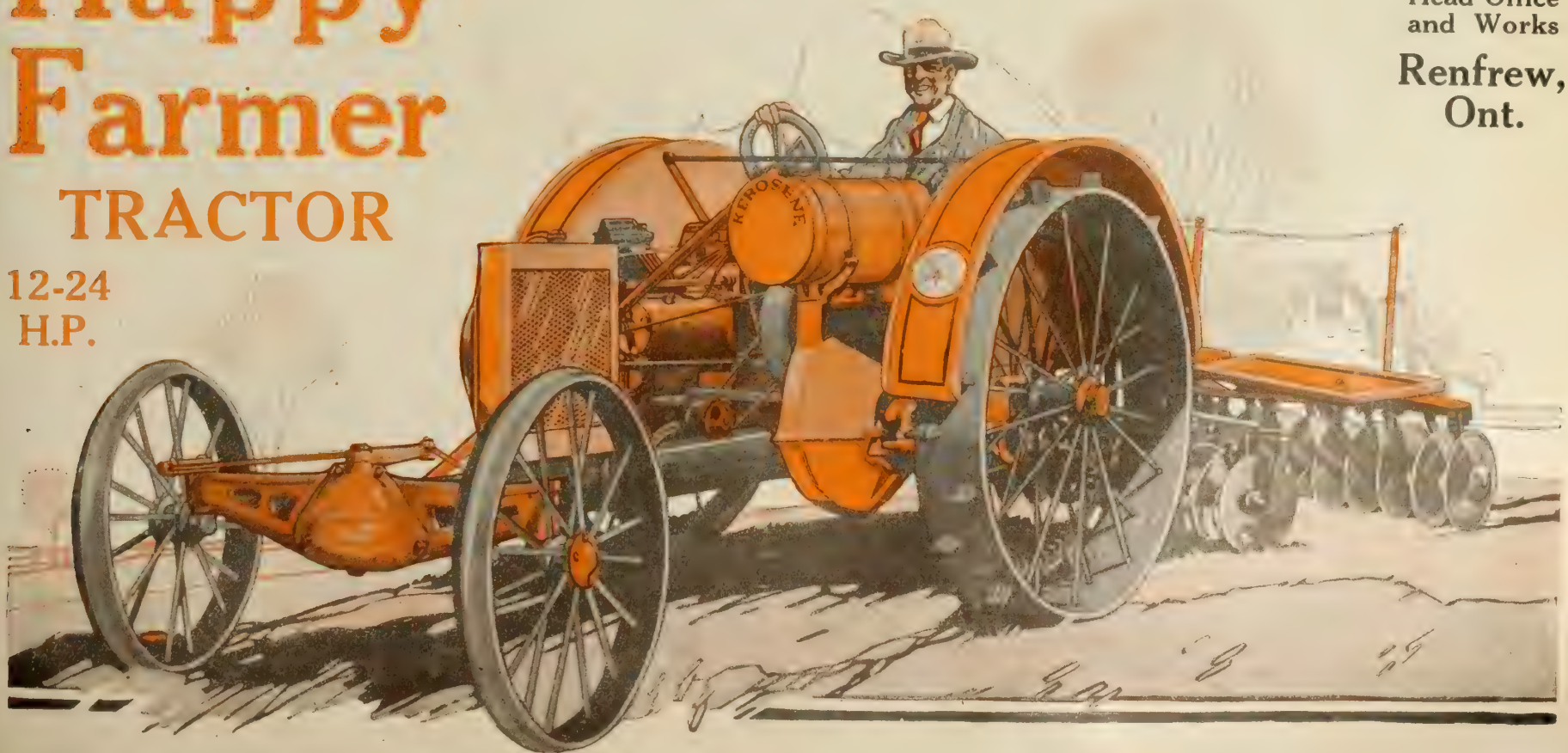
Happy Farmer

TRACTOR

12-24 H.P.



The World's Best Bread Wheat

WE call it "Cream of the West" for the best of good reasons. Just as the cream is the best part of milk, similarly the wheat we use is the "very cream" of Western hard wheat, the finest wheat in the world for bread. That is why

Cream of the West Flour

The hard wheat flour that is guaranteed for bread

makes splendid, big swelling loaves, always highly nourishing, always dependable.

The reason is, the Western hard wheat we use is exceptionally rich in gluten, the elastic substance that enables the yeast to make the bread rise properly. Besides, the gluten has a wealth of body-building protein which ensures the highest nutritious value.

Cream of the West is always the same high quality and uniform strength. It never varies, never upsets your recipe.

Every shipment of wheat undergoes a test in our laboratory, by which we know exactly what it contains; this test enables us to keep our flour uniform in quality. Not only this, but our expert bakers are continually testing the flour by baking big bulging loaves with it.

You can have these splendid results too, with your own bread. Just give Cream of the West the right good trial it deserves. Then you will use it always.

The Campbell Flour Mills Co., Limited

West Toronto, Ontario

Canada Food Board Licenses, No's 6, 7 and 8.

Power Your Tractor, Automobile and Other Motors With En-ar-co National Motor Oil

THE service rendered by En-ar-co petroleum products in aeroplanes and other motors of war can be duplicated in *your* tractor, automobile, gas engine or other power machinery. You can experience the same increased power, longer wear and smoothness of operation. You can benefit by nearly 40 years of experience in Scientific Refining.

Economy Ready Mixed Paint

For all outdoor and indoor painting

Write for color cards and prices

En-ar-co National Motor Oil

The Scientific Lubricant

Thousands of gallons of En-ar-co National Motor Oil have been used in aeroplanes here and over-seas. The work a lubricant must do in these motors is far greater than will ever be required by your motors. But only the best is good enough. You cannot afford to take chances.

In wood barrels (average 50 gals.)
In wood half-barrels (average 30 gals.)
In steel drums (average 50 gals.)
In steel half-drums (average 30 gals.)

White Rose Gasoline has an unmatched record for high power and dependability. Its continued use brings utmost mileage and economy.

For oil powered tractors National Light Oil is recommended by leaders and authorities. Also best for lamps, oil stoves and incubators.

The need for several kinds of grease has been eliminated by En-ar-co Motor Grease. It gives perfect lubrication for all purposes around the tractor or motor car.

Black Beauty Axle Grease and other En-ar-co products are of equally high quality. The name En-ar-co identifies the dependable and guarantees quality.

Buy of Your Local Dealer If He Has En-ar-co Products in Stock—If He Cannot Supply You, Mail Us Your Order Direct

Start the season right. Insist on En-ar-co Products. Ask the dealer nearest you. If he has not yet received his stock, send us your order on the attached coupon. Don't be satisfied with less than En-ar-co — the best.

Use This Coupon If Your Dealer Cannot Supply You

Longwear Barn, Bridge and Roof Paint for lasting satisfaction. Put up in barrels and half-barrels. Write for color card and prices

Canadian Oil Companies, Limited

(128)

Excelsior Life Building **Toronto, Ontario**

Send This Order Coupon Now!

CANADIAN OIL COMPANIES, Limited,
1289 Excelsior Life Bldg., Toronto, Ont.

My Dealer.....

located at .....
cannot supply me. Please ship the following from your nearest branch. Check enclosed for $.....

.....Gallons En-ar-co National Motor Oil
.....Gallons White Rose Gasoline
.....Gallons National Light Oil
.....Pounds En-ar-co Motor Grease
.....Pounds Black Beauty Axle Grease
.....Gallons Paint for Painting.....

My name is.....
Address .....
Postoffice ..... Province.....

SARNIA POULTRY FENCE

Make More Money!

Buy a Real Poultry Fence

THERE is a growing demand for a lighter weight fence suitable for poultry yards, orchards, gardens and other farm purposes. There is also a demand for a heavier weight poultry fence than the so-called poultry netting. You may have had some experience with the light weight netting, and, if so, you know that it is a waste of time and money to put it up, besides it always has a loose, shiftless appearance. The Sarnia Fence overcomes these objectionable features. The extra strength of our fence enables us to stretch it to any desired tension. Stay wires and lateral wires in this fence are fastened securely by the famous Sarnia Knot, providing ample rigidity in the body of the fence and making it adjustable and suitable for various purposes about the farm. The Sarnia Fence is close enough to turn small fowl, yet strong enough to turn a large bull, thus affording perfect protection to your yards and grounds.

SARNIA POULTRY FENCE

is easily constructed, requires less posts. You don't need a top or bottom board to keep it in place. Lasts many times longer than netting because its wires are larger, stronger, and the fence itself is attractive and durable. There is no buckling of wires. It is easily constructed over uneven ground; no sagging or bagging as in the case of the flimsy netting, and when it is once properly constructed it is there to stay. It gives you real fence satisfaction. Poultry farmers all over Canada testify to its value. It is the "Farmer's Friend" kind. Poultry in Canada has gone a long way toward keeping the home table supplied while the boys were "over there." Build the poultry business for permanency as a business. Sarnia Fence will do its part. Will you do yours? In your new drive for business, don't forget that poultry is a business, and that Sarnia Poultry Fence is necessary to your success.

Sold and shipped direct from factory to farm, freight prepaid. Send for our descriptive literature about farm fencing, gates, lawn fencing and supplies. Prepaid freight prices are quoted in Old Ontario, New Ontario, Quebec, Maritime Provinces, four cents per rod extra. Our office at Winnipeg takes care of all Western Canada business. Shipments made F. O. B. Winnipeg. Order now. Have your fencing in hand early, and when you need it. Let's tell you what the Sarnia Poultry Fence will cost laid down at your railroad station in whatever quantity you may desire.

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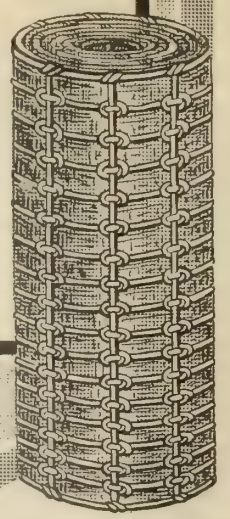

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FARMERS' MAGAZINE

Canada's National Farm Magazine

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An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.—Lloyd George.

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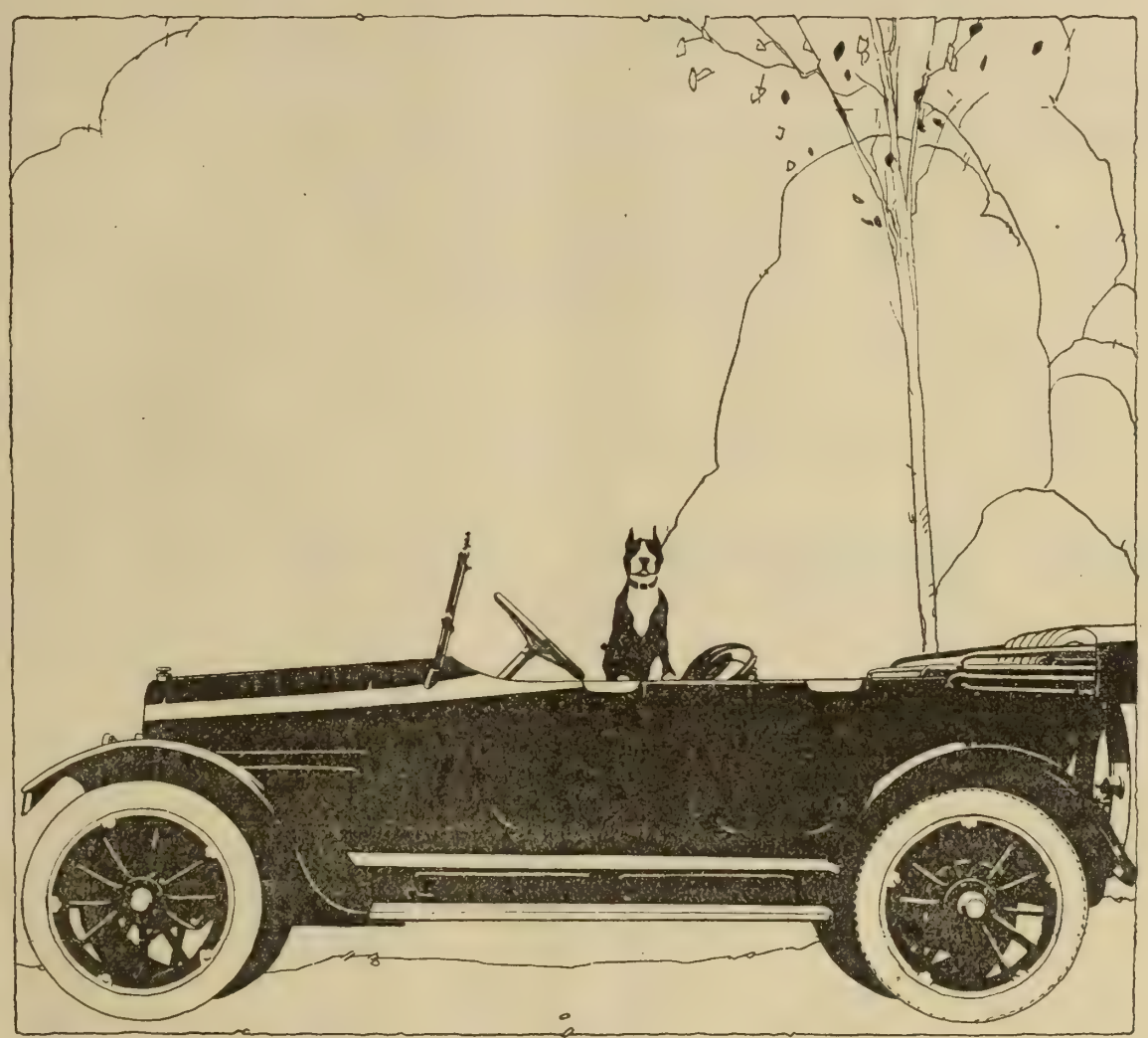

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Investments & Insurance For the Farmer

Borrowing Money at the Bank

By ELUID KESTER

TOO many farmers object to borrowing money to carry on their operations. A great many look upon such as an evidence of inferiority or of poverty. But if we look at the business men in their operations in every town and city throughout the land, we will find that they are heavy borrowers at the banks, and that they cannot carry on business unless they carry loans at their banks. Now it is just as applicable to the farmer as to any other business man. If he is conducting his business along the right lines and wishes to develop his trade during the year, he ought to go to his bank and get a line of credit to cover his whole financial year and use the money whenever he can to the best advantage. If he can make more gains by using more money then it is clearly his duty to do so.

Of course there are times when some farmers have not enough good judgment to carry them successfully through a business operation involving borrowed money. And in that case they ought to go slowly and take the banker's advice in a great many things where they might otherwise lose out. As a farmer I have never found that the banks have given me very much bad advice, but have always been interested in a business proposition presented in a business way. If we can show the manager that there is a likelihood of making good money by taking out a loan from the bank, he will size up the whole situation and be glad to accommodate us if the transaction has a chance to succeed.

And as security for the loan a man's good name and his good judgment are of more value to the bank manager who is really on to his job, than other assets of land or stock. It is almost impossible for the average farmer to hold three or four thousand dollars in the bank ready for doing a trading business during a few months of the year. This money can be better invested to yield a steady all-the-year-round income and when he needs any surplus funds he can secure them at the bank for a short time at the current rate. It will pay him to do so. The farmer of to-day is first of all a business man, and the more business methods he can introduce into his financial operations every year, the more likely he is to have more business; and to make farming a more attractive proposition for the boys. This is one good thing the farmers' clubs are teaching us.

These clubs have taught us that the banks will take our notes and lend us money for large purchases, to be repaid as the funds come in. The man who regards his word to a bank as good as his word to his fellow men, finds no difficulty in getting all the necessary funds he may require to carry on his business.

In my own business I run a bank account with the branch bank in my nearest town, and if I find I need $500 or $2,000 to finance a feeding business or to buy a carload of stockers, I go to the bank, borrow the money on a three months' note, deposit the proceeds into my account and draw on it by cheque as I need. All payments made to me I deposit to my account, and when the note falls due my cattle will be sold and the money is ready in my account for the manager to take up the loan.

With the small farmer the case is perhaps different, but in degree only. Success in any business depends on saving some money from our earnings. This saving habit is the crux of the whole situation. And that is one of the big things the Victory Bonds have done for our people. They have been led to see the value of saving.

SIR WILFRID WAS INSURED

INSURANCE is one of the best forms of thrift for the average man. It insures his estate against his death and provides for the family in a way that is mighty satisfying when the head of the house is laid aside.

Sir Wilfrid Laurier's widow has just refused the Government's proposal of a pension. Her financial position is largely due to Sir Wilfrid's foresight in providing life insurance. As Sir Wilfrid said on one important public occasion, life insurance should be considered by every young man.

AN AGRICULTURAL BRANCH RAILROAD.

By JOHN PAWTUCKAWAY

THE imminent construction of the Kamloops-Kelowna branch of the Canadian Northern Railway, official assurance concerning which has been given, causes a flurry in Inland British Columbia pungently reminiscent of the development days when important new enterprises were announced monthly or oftener. The Kamloops-Kelowna branch line will serve and help to develop territory almost strictly, if timber interests be overlooked, of a rich agricultural nature. It will penetrate the Northern and Central Okanagan Valley, furnishing valuable transportation facilities to settled districts and assisting in the development of others, notably Lumby.

Locally, the construction of this branch line has long been looked forward to; its necessity is taken for granted. No agricultural section of British Columbia has forged ahead more notably in the past half-decade than the Okanagan Valley. Its specialties are fruit and vegetables, essentially bulky commodities, and the tonnage has been increasing markedly as new orchards came into bearing. Agricultural by-product industries have developed, and there has been growth in both the dairy and beef cattle industries. Produce shipped in 1918 ran into the several millions of dollars. Continued increase is a positive certainty.

The new branch railroad will do several things for the Okanagan, besides furnishing obvious competition with the Canadian Pacific Railway, which operates a joint rail and water line from Sicamous to Penticton.

It will furnish a direct route, without trans-shipment, to Northern prairie territory at present reached with inconvenience.

It will furnish relief for the congestion, intense in the heavy shipping season, at Okanagan Landing, where at present all shipments must be transferred from barge or boat to railroad.

It will open up for serious agricultural development many thousands of acres of first-class agricultural land in the Lumby region. Lumby is characteristically mixed farming country. Rainfall is somewhat heavier than down the lake, obviating the necessity for irrigation, and there are considerable lumber resources. Hay is a flourishing crop; grain does well; pasturage is first-class.

Incidentally, the Okanagan Valley will be benefited by the construction activities. They will put a lot of money in circulation. They will temporarily visibly increase the local market for all farm products. But viewed in a larger way, the Kamloops-Kelowna branch line gives much satisfaction. It is a needed railroad. Its construction is amply justified by present and future business. It will inevitably quicken the farming development of one of the very nicest localities in America, on either side of the international boundary.

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His root house occupies the lower floor of this simple and easily-constructed building—and by sloping the ground surrounding it he has secured a ground-level entrance to the upper floor which is his granary. Size of this building, 14 feet wide and 19 feet deep.

PROPER provision should be made to store and protect the root crop, and thus not only can a supply be kept for home use, but quantities which would otherwise be sold at low prices, can be held over until spring, when a higher market price prevails for these commodities.

Root houses should be built in the ground as protection from the cold is thus afforded, and less effort is required to keep them warm.

On pages 52 and 53 of our book, "What the Farmer can do with Concrete," will be found directions for building a root cellar. You should have this book, not only to learn why and how to build a root cellar of concrete—but also to understand how to construct many other farm buildings and improvements that farmers now build of concrete as a matter of efficiency and economy.

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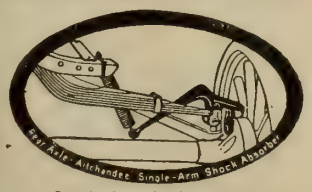

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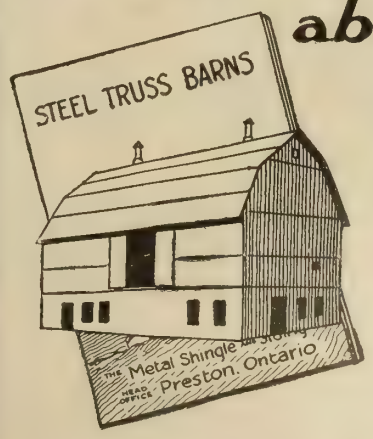

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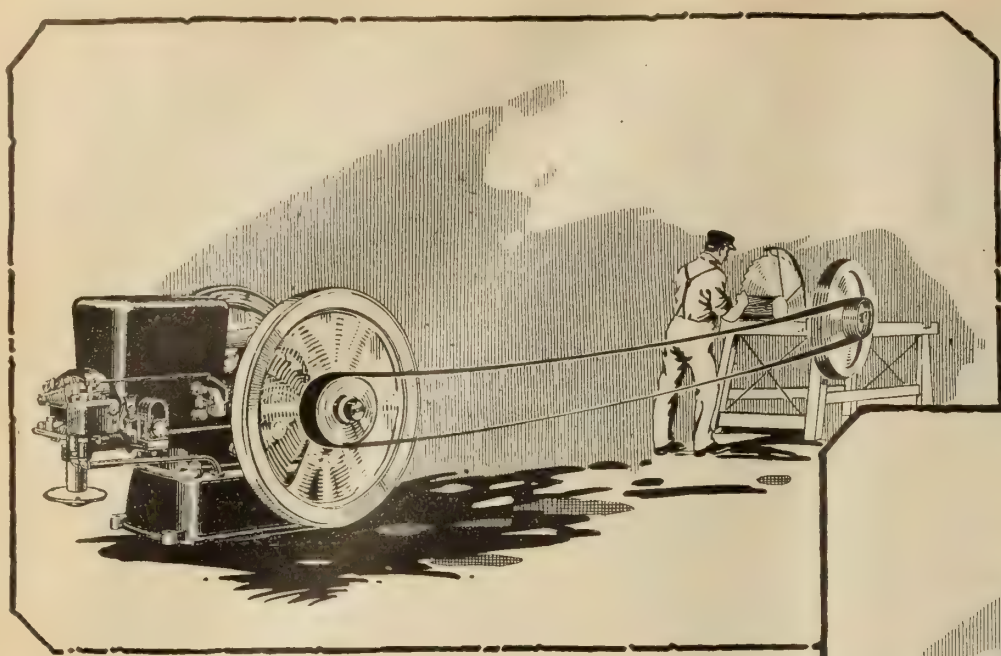

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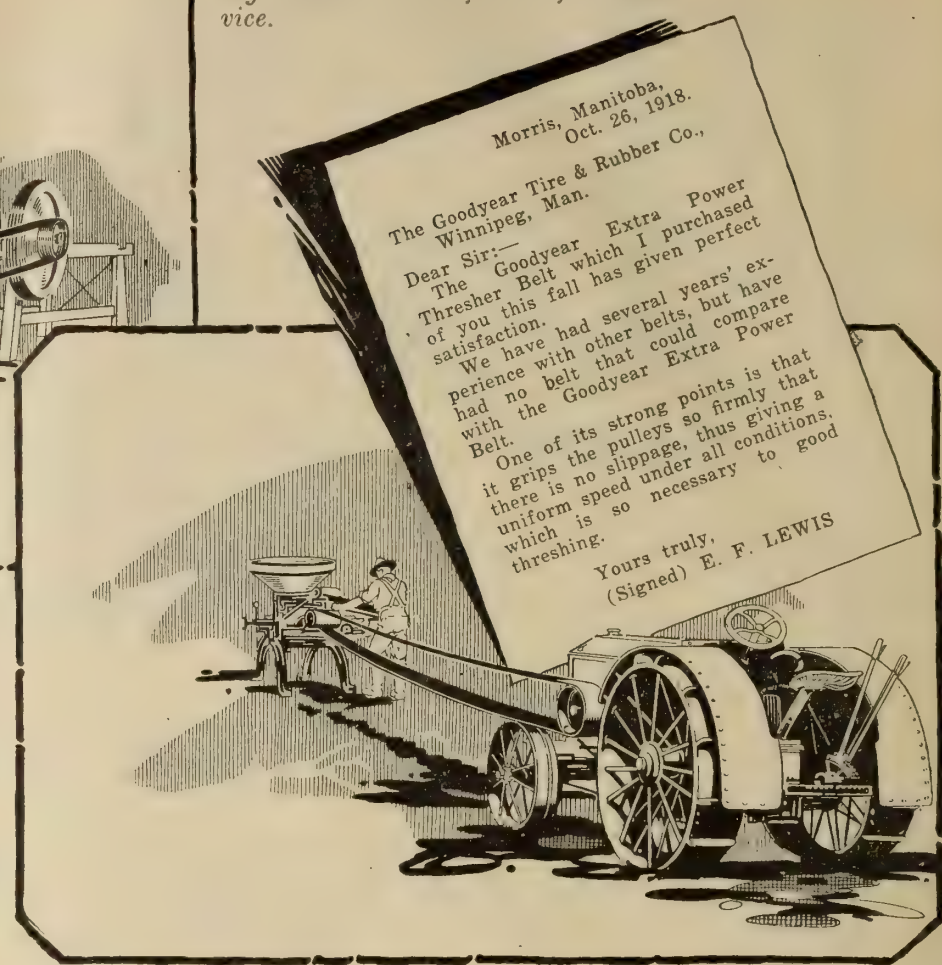

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You can't afford to take chances on belting at any time. To-day, you should be particularly careful. There are two reasons.

In the first place, all belting is higher in price. Both labor and materials that go into a belt cost more. The difference between the price of a good belt and a poor one doesn't show the difference in quality to-day as clearly as it used to do.

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EXTRA POWER BELTING

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. MARCH 15, 1919 No. 6

Maritime Farmers Figure on a Good Year

By R. J. MESSENGER

IT might be said that what affects Nova Scotia agriculturally affects also the other two Maritime Provinces, but this is not absolutely true.

Prince Edward Island, because of her somewhat isolated position and the seasonal difficulty in reception of necessities from outside and in distribution of her products, has naturally become more independent and self-sustaining than the other two Maritimes. She has a fourth more population, twice as many cattle, three times as many sheep, four times as many hogs and more than four times as many fowl *per square mile* as Nova Scotia and New Brunswick put together. In fact she produces more of all the classes of livestock *per square mile* than all the other provinces of Canada put together, and not only in livestock, but in vegetable and cereal production she is away up on top. Prince Edward Island is an agricultural pearl nestling up here in the Gulf and Canada should be proud of her. She needs no more praise than Aunt Jane's mince pies that filled her nephews too full for praise or any other variety of utterance.

But I must get back on the mainland. New Brunswick has not as much cleaned land proportionally as Nova Scotia. She rather runs to forests and therefore has only about half the population per square mile that Nova Scotia has; but taking note of this she keeps up and rather exceeds her proportion of the different kinds of livestock.

In fact all three of the Maritimes are well up in livestock, though the extremely short crop of hay in some parts of Nova Scotia has led this winter to the sacrifice of cattle in a half-finished condition. If livestock is the foundation of Nova Scotia agriculture what are some of the immediate problems facing the farmer for the next season? According to contributions to FARMERS' MAGAZINE and other periodicals, and judging from a severe experience of scarcity and high price of foods of all kinds for livestock, and from the fact that cattle and hogs are being sadly depleted in numbers, one is comparatively safe in predicting a strong demand during the year for all breeds and kinds of cattle and hogs.

Conscience a Factor in Prices

Right here in the Annapolis Valley the problem of feed for stock is most acute. I have sold hay at the barn loose for $25 per ton and could have taken $30 if my conscience would have allowed. Bran where it could be purchased has been selling at $52 per ton. Cornmeal retailed at $90 per ton. Turnips sold in bulk at 1c per lb.

Is it any wonder that I have seen brood sows and other dressed porks being shipped from our stations so thin that one could detect the vertebrae and almost see through the flank? Especially where late fall pigs sold at $2.00 each at 4 weeks old, when in the spring they commanded a price easily of $7 and $8 each at the same age.

Farmers are not in the business for the joy of life. They are beginning to wake up and ask, "What course will bring me the most money without making me sorry later?

Thus many good farmers have sold turnips at 40-50c per bushel, knowing that they would be worth 15c when fed to cattle. They have taken the money and purchased concentrates even at the high prices and made money in the transaction. In order to sell roots they have sold brood sows for pork, knowing that in the present over-production and low prices for pigs they could make 30c to 40c per bushel on roots by *not* feeding

The tractor as a farm servant is in Quebec and the Maritimes, too. The farmers are going to find light tractors their way out of many difficulties.

them, and knowing too that in six months they could have young brood sows again.

So many farmers have kept the young pigs they could not sell well and killed off the old ones.

Farmers Acted Wisely

That this policy was sound is seen in the fact that, while pork kept fairly well up in price and allowed a good market for mature stuff in the fall and early winter, all feeds, whether raised for the farm or purchase, were high in price. Now that cornmeal and other concentrates are easier, or at least not advancing, the young stuff saved in the fall is getting to the age where they need it, and a good market, perhaps the best we have ever seen, awaits these pigs when they are old enough to slaughter. The same is true of cattle. When the hay and feed situation was so acute that they could not be purchased, there was no alternative but sacrifice sales. One drover told me that in a district not far from the centre of the valley he could purchase cows for $15 each and possibly less. The farmers had not even the feed to fit them from market.

The present scarcity of meat-producing animals all over the world demands a safe and profitable line of action for the farmers of the Maritime Provinces, and indeed the whole of Canada, for at least three or four years, whether for breeding or slaughter or both.

One who aspires to be a prophet of the future generally walks on slippery ground, but I am willing to predict that the hay crop in Nova Scotia will not be as short again in ten years at least, unless we have an abnormally bad growing season.

For the past two or three years the cry of *produce more* has led to the use of thousands of acres (that were formerly raising hay), in the growing of grain and cultivated crops. This has lessened the hay raising acreage and also has suspended the operation of new seeding.

Grass Lands Will Come Back

Consequently even a normal season would have materialized a swollen tonnage of hay for the valley, but added to this swollen acreage in grass, we had, last season, a very dry spell of weather during the period of growth.

With the *greater production* noise in a measure absent or at least less insistent, together with the high price of hay and low price of such ready money products as beans and potatoes, farmers will naturally turn more eagerly to the seeding down of land and the production of more hay, which of course is an accessory, either before or after the fact, of increased livestock production. Hay is the most necessary adjunct to the production of cattle, other feeds being necessary, but requiring more labor and time.

Turnips and mangels are more easily and universally raised in the Maritimes than corn silage and require less machinery and capital. They are most essential as a means of succulence in any nation, if ensilage is not to be had. In connection with increase in production of livestock it is to be expected that roots will be raised in 1919 to a greater extent than ever before, especially since there will be acres of bean and potato land in splendid condition for roots that will not be planted again with the former crops after the experience of last year's prices.

Where Will Concentrates Come From?

One of the most serious problems, however, is not the growth of roughage in the ration, but how and where to obtain concentrates economically. The war has *possibly* yielded one benefit to Nova Scotia agriculture and I am not quite sure of my ground here. There has been a substantial increase in the growth of grain, especially wheat. Almost every farmer, large and small, raised some wheat last year, and the local mills have been running to capacity this winter grinding it for the farmer's own use. Heretofore he depended almost wholly on the West for his bread.

The writer, in fact, for the first year of his farming experience, with the exception of sugar, spices and a few other small items, is running the home food problem entirely within the production of the farm. Meat, porridge, preserves, bread, pastry, cake, sauer kraut, pickles, fruit, vegetables, everything produced at home, and all as wholesome and appetizing as we ever ate.

These cereals, when milled at home, provide a certain amount of by-products in the shape of concentrates, but in most cases this does not materially relieve the feed situation unless the farmer has enough milled to enable him to sell flour. So that for 1919 we will still have to depend largely on the West for our concentrates.

I expect, however, that in the coming season there

Continued on Page 38

FEATURES WORTH WHILE

In this issue our Ottawa editorial representative gives his first review of the doings at the House of Parliament. Watch his summing up in each issue.

In next issue begins a story of Seagar Wheeler's big wheat creations. He is the wizard of Canada. Read Burbank's story in this issue.

The Dutch Colonial Farm House

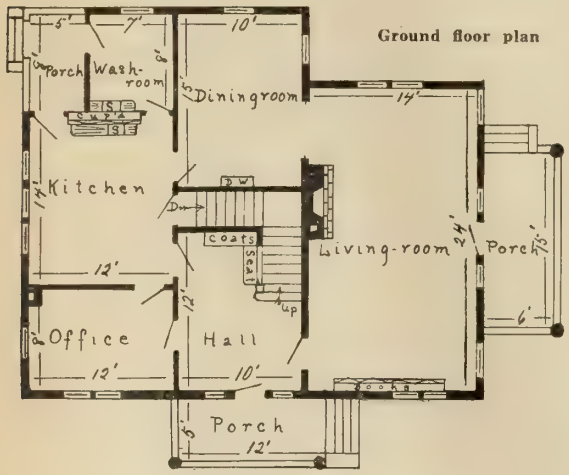
A Suggestion For Building or Remodelling

By GENEVIEVE

THE simplicity, charm and general hominess that rightfully belong to a farm home are well expressed in this Dutch colonial house. Moreover, even a casual glance will show that almost any plain, square house could be remodelled after this style, excepting the slanting roof-lines, with little more alteration than the addition of porches and perhaps a rearrangement of windows. It must be admitted that the suggestion of snugness and shelter is due in a great degree to the low, earth-hugging effect of the broken roof-line, but in remodelling, if it does not seem worth while to alter the front of the top half of the house to get this effect, a very good result can be had from a vertical wall or a direct slant back to the peak of the roof. The air of trimness in the white painted walls and green shutters, and the livableness of the informal arrangement of windows and porches give an impression of good housekeeping, hospitality and comfort.

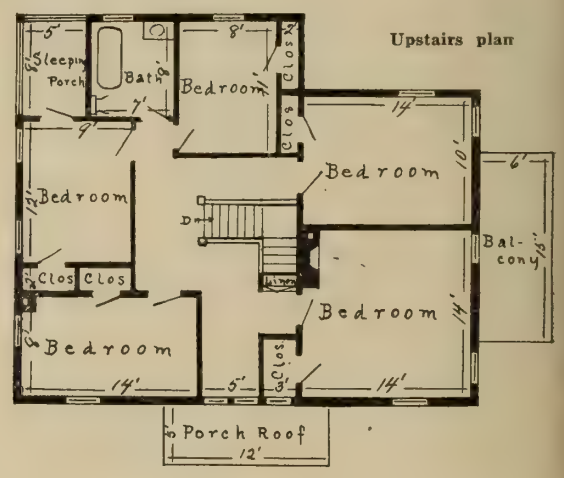
The same informal, homelike arrangement is carried out in the interior. The front door opens into a wide hall from which the stairs go up, turning at a landing half way up. This turn brings the high part of the stairway in a convenient place for the cellar stairs to run down underneath it. The foot of the stairs too is not far from either the living-room or kitchen. The living-room, running almost the entire length of the side of the house, is a delightful room for a country home. It is large—too large, some people may think—but if you want a place for a reading-table large enough for the whole family to sit around, and a corner for the piano, and room for a wide circle around the fireplace, and space to entertain little gatherings of friends, a room of this size will not be too large. Some of the features that go to make the room most cheerful and inviting are the lighting from windows on three sides, the shaded porch, which may be reached through either a French window or glass-panelled door, the big brick fire-place and the wide entrance to the dining-room. There are sliding doors between the two rooms, however, so that they can be shut off when desired for convenience or privacy.

A house that gives an impression of hominess, good housekeeping and comfort



On the left side of the entrance hall is a small office and back of this the kitchen. Business callers can be taken into this office from the front door without going through any other part of the house, but, to give the room an air of hominess and comfort for the owner when he drops in to enter up his daily business, it has another door opening to the kitchen. The average farmer will find an office a far more habitable place if it is within sound of the singing of the tea-kettle and other tokens of the domestic life of his household. The kitchen is well-lighted, well placed with relation to the dining-room, and equipped with a good sink and cupboard arrangement—the large drain-board at the left of the sink, and the cupboard above it. The washroom relieves the kitchen of such work as washing, and having an outside door from the back porch the men can come in and wash before entering the kitchen at all. The back porch makes a shady out-door place where odd pieces of kitchen work can be taken in hot weather and the dumb-waiter in the dining-room saves unnecessary trips up and down cellar stairs. An essential feature of the modern farm house is that, in every detail of the planning consideration shall be taken for making the housework as easy as possible, without interfering with the comfort and best general conditions for family life.

The upstairs has been arranged to get five bedrooms with a clothes closet off each, a sleeping porch and a bathroom. The back bedroom is rather small for constant use, but will be a convenience at certain crowded times. The other rooms are particularly good, a good size, well lighted and airy, the one with the sleeping porch especially should be used all the time.



Farm Power Costs by Gasoline

By William Heron Westney

WITH the advent of Hydro power into our township in the near future, many farmers are beginning to compare its costs with that of their private gasoline power equipment. A number of farmers have gone to considerable expense in purchasing gasoline outfits and naturally are interested in any advantage that the Hydro may have in store for them. I have therefore, by way of comparison, studied a few figures as to cost of equipment and operation of gasoline farm power, this being the most extensively used small power in this section. These items are results of actual performance and the 4½ H.P. engine furnishing belt power at the farm has been in operation for nine years, with similar results as to cost and efficiency. The following shows cost of operation for one month:

Interest per month on $180., at 5%	$ .75
Depreciation per month on $180. at 5%	.75
Gasoline per month on 7½ gals. at 37c	2.77
Lubricating oil	.18
Repairs estimated	.10
Dry cells	.20
Total per month cost	$4.75

The following work was done on my farm in 30 days: fanning grain one day; ground all grain used for 8 milk cows, 6 fat cattle, 5 horses and 16 hogs; pumped water for 50 head of stock; pulped roots each day; cut some dry corn, and operated the milking machine twice a day, thus milking 475 cows in the month.

At other seasons of the year the same engine sawed wood and, coupled with another engine, filled a silo.

As the Hydro would also furnish power at the house, the following cost of operating a 1½ H.P. gasoline engine in the house should be interesting. Washing and churning every week, besides grinding mower and binder knives, this engine has never used more than one gallon of gasoline in any one month, and at present provides power for washing for a family of seven and other odd jobs on less than one-half gallon.

Top cut shows how W. H. Westney lined his gasoline engines up in tandem fashion to drive his ensilage cutter and the lower cut is the metal house for the gasoline engine that operates all his farm machinery.

Interest on investment	$ .25
Depreciation per month	.25
Gasoline ½ gal. at 37c	.20
Lubricating oil	.05
Total cost per month	$ .75

The coal oil for lighting of house and barn, and for use in oil stove for part of the cooking and ironing in summer, would result in a total per month cost of $1.20 allowing for repairs and depreciation.

Here one will see at a glance the cost of light and power per month on a 100-acre farm where Hydro could take its place.

Power at barns	$4.7
Power at house	.7
Light and part of summer cooking and ironing	1.2
Total per month	$6.7

These figures are based on actual results and would be very glad to see published the actual results of cost of Hydro operation, under similar conditions of work that would be encountered on an Ontario farm including wiring, installing, overhead charges, rate depreciation and interest on investment, so that we would be in a position to know just what we could expect in taking advantage of the Hydro-Electric power and light from a financial standpoint. The installation of my gasoline power cost me nothing.

What Does Tractor Service Mean?

By A. P. YERKES

EVERY farmer well realizes the fact that there is something more to buying farm machinery than merely obtaining an implement which has been properly designed and well built. The best machine may be broken through carelessness or accident and it may be necessary to obtain a new part at the very busiest time in the working season. It is in cases like these that the farmer realizes the necessity of owning a machine made by a manufacturer who has provided facilities for prompt and satisfactory service after the machine is at work in the field.

When a farmer has his grain half cut and a piece of the binder breaks or loses off and the work must be stopped until a new part can be obtained, he does not want to have to wait while the piece is ordered and shipped from the factory, perhaps a thousand miles away. He may not think much about the matter of service when he is buying a new machine, but the first time it is necessary to replace a part he will realize how important it is that he should be able to call up his implement dealer and have the part sent out, or to get into his automobile, drive to town and bring the necessary part back with him. And in case he does not feel competent to undertake to replace the part personally, he wants to feel sure that the local dealer is either able to come out and do this work personally or has a competent man whom he can send.

While good service is very desirable in the case of all farm machines, it is probably of greatest importance at the present time in connection with the farm tractor. Years ago when the binder was comparatively new and farmers were, therefore, not thoroughly familiar with its care and operation, dealers were called on very frequently to assist in making repairs and adjustments. As years went by and farmers became better acquainted with these machines, such help from the dealer in the adjusting or operation of the binder was called for with less and less frequency, and at the present time very little service of this nature is needed.

The same will undoubtedly prove true in the case of the tractor. To-day the tractor is still a comparatively new thing to a great many farmers. They have had little or no experience in their operation and, consequently, are frequently very much perplexed and baffled by some slight difficulty which to the experienced operator would seem insignificant. Until farmers become fully acquainted with tractors, therefore, the need of having first-class service always available is especially desirable. There have been a number of different tractors placed on the market in the past few years which have been produced by small concerns which had only limited sales organization, and practically no facilities to give the kind of service which the average farmer demands for these machines after they are in the field. Some of the outfits were probably all right mechanically, but, as stated, the best machine will occasionally need some repairs, especially when it is operated by a person who is not sufficiently proficient to give it the kind of care which it should receive, and when such repairs are needed they are usually needed very badly. Delays during the working season generally mean a direct loss to the farmer. He cannot, therefore, afford to take chances.

When purchasing a farm tractor, one of the principal considerations which should govern a farmer is that relative to the service which the manufacturer maintains for that machine in his neighborhood. This will frequently prove of fully as much importance to the farmer as the selection of a machine which is suited to his condition and one which is first-class from a mechanical standpoint.

The matter of service, however, should not rest entirely upon the shoulders of the men who produce or sell the machine. The purchaser should be willing to do his part toward assuring satisfactory operation of the outfit after it is at work on the farm. This is more to his interest than to that of the manufacturer or dealer.

Neither the dealer nor manufacturer should be expected or required to furnish repairs which are made necessary merely through ignorance on the part of the operator of the machine. The man who purchases a farm implement should take the trouble to assure himself that he knows how to operate and care for it. This alone is usually enough to reduce the need for service to a minimum.

There is no doubt whatever but that more repairs are made necessary through abuse or inefficient operation at the hands of the operator than from any other one cause. The manufacturer and dealer cannot overcome this difficulty without the farmers' co-operation. Several tractor concerns have gone to the trouble and expense of carrying on schools for the instruction of the operators of farm tractors, in order to make sure that the men who would handle these machines in the field were familiar with their care and operation, and should for that reason require a minimum amount of service from the dealer or manufacturer after the machine reached the farm.

ARNOLD P. YERKES
Tractor expert with the United States Government during the war. This is his second article. Another on lubrication of tractors, follows.

While thousands of farmers have availed themselves of the opportunities thus offered, they represent but a small percentage of the men who should make use of the facilities afforded them. Most manufacturers realize that the best advertisement of their product is a satisfied user, and this fact is largely responsible for carrying on these schools which are designed to teach farmers how to operate and care for his tractor properly, as a competent operator of a tractor is almost invariably well satisfied with his outfit.

Another way in which farmers can do their share in avoiding the necessity for demanding service from the manufacturer and dealer is by carefully reading the literature which is furnished by the manufacturer. Instruction books and other printed literature furnished by the manufacturer are usually prepared with great care by men who are experts in the care and operation of that particular machine. While they may not always be as clear and understandable as could be desired, nevertheless in most cases a great deal of useful information can be obtained from them if read carefully. There are hundreds of cases where farmers call for assistance in making adjustments on a tractor, or in overcoming some slight difficulty, when a few minutes spent in looking over the instruction book would have enabled them to make such adjustments easily and quickly.

Don't throw the instruction book away; keep it in a safe place convenient for reference. Read it and reread it. Often things which are not clear upon the first reading and before the operator has become acquainted with the machine will be quite clear as he gains a little more experience.

The whole question of service for tractors, therefore, involves the manufacturer, the local dealer, and the farmer. In order to insure entire satisfaction each one of these must do his part. It is obvious that a farmer, in selecting a tractor, should exercise his best judgment in choosing one which has been designed by men who have had considerable experience in building farm tractors, and preferably experience in the manufacture and operation of other machines with which the tractor must be used. This alone will go a long way toward insuring a tractor which will require a minimum of service.

He should next consider the proximity of a supply of repair parts which he might require, and also the proximity of some one who can assist him in making repairs and adjustments should occasion arise. But above all he should assure himself that he is capable of operating the machine with a fair degree of proficiency or have some one who can do so, for the best insurance of satisfactory operation of a tractor is a proficient operator, and this is a matter which rests entirely in the hands of a tractor owner.

Epigrams

By PETER McARTHUR

WHY not have the nations at the Peace Conference sign a treaty agreeing that in all future wars the armies shall be led by diplomatists and rulers? That would make a solid peace.

Some military men are reported to be demobilizing their vocabularies before returning to civil life.

The high price of matches is not entirely due to the war tax. Smokers and housewives would like some light on this subject.

The Canadian army was "The Spearhead of the Allies." When it comes home we must not tie all the ribbons on the staff.

In making jobs for the soldiers why not give them the jobs of some of the men who are on the job of making jobs for them? It would be a good job.

It is easy to detect a profiteer. He lights his cigars with matches in a way that shows that money is no object to him.

Two tractors in operation at recent farm power course, given at Guelph, Ontario.

FARMERS' MAGAZINE

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA

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CONTRIBUTORS' names will not be forwarded, as they are considered confidential.

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143-153 University Ave., Toronto, Canada.

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MEETING OUR FRIENDS

THE editors of a farm journal are human like their readers. They are as susceptible of praise, or as hurt by unjust criticism as is the individual. But there is this difference: The editor is the centre of a big body of readers who either agree, disagree, or are indifferent. The individual comes into vital personal relation with a comparative few, and that few very seldom express to him, any real appreciation or disagreement. With the editor, it is somewhat different. People as a rule are not afraid to talk back at a distance or even incognito. It is much easier to write and tell a person one's good points or bad make-up, than it is to speak it *viva voce*. Consequently the editorial sanctum sees the play of joys and sorrows, of approval and disapproval on a greater scale, and were it not that the human equilibrator were working freely, there might be more cases of dementia than there are.

The editor looks upon all correspondents, though, in a very friendly light. He feels the joy of consideration whether the epistle be one of gloom, anger, or elation. Distance softens the sense to a conversation basis and things appear very much as they really are.

For instance, one subscriber writes in to say how much he disagrees with our editorial jibes at incompetent politicians. He claims he has found us out. We are nothing but a scheming Grit in disguise. And he has stopped other farm papers because opinions were aslant his, and he threatens to stop his now. But like the Irishman on the train, who fooled the railway by buying a return ticket when he was only going one way, so our reader has a paid-up subscription and must read on.

Another assures us that he is offended at our Toryism. "I see you are with the old Conservative bunch who do not progress," writes one well-meaning friend.

Both of these are valuable readers, are good fellows. They think along well-defined lines. Had they to cut a swath for the good of all, they would doubtless be equally as assertive of the joys of a broad-minded national life that looks above party.

Complaints, though, are not the rule. In fact we get far too few criticisms. Editors invite such as real guide-posts in their work. Too many unqualifiedly approve. They frankly tell us how they would be at a loss to inform us how we could improve our FARMERS' MAGAZINE.

It was rather gratifying to us recently for a Normal School student to visit the office and tell us that our magazine had been used all through the term by the students as a text-book on actual farm life in Canada. That tribute carried with it a meed of praise that was most convincing. Still another instance was of a prominent well-read farmer who showed by his conversation that he knew every corner in the magazine and enlarged upon the value of the many departments and the clean appearance of the whole journal. We knew he rang true because he recited what the paper contained even after we had forgotten the incidents.

An Ontario Hereford breeder's words are much appreciated, for we are partial to livestock men:

> I feel it my duty to express my opinion upon your very valuable paper. I indeed am more than pleased with it and am sure it ought to be in every home in rural districts, for it gives more real information than any farm paper or magazine that I know of. I really can't praise it too much. I am enclosing $1.50 for a year's subscription and wish you every success in your good work.

BE ON THE JOB FIRST

The crop year on our Canadian farms is beginning. The year's returns will largely hinge on how well we have already planned. And certainly there is a wide gap between the revenues from a hit-and-miss and a well-thought-out rotation.

Greater farm incomes mean greater enjoyments. That's why we must make more money in our business. It does not mean a piling up of dollars for the sake of the dollars, or an accumulation of wealth by the sordid farmer who is already known as a tight-wad and even by the more opprobrious title of skinflint. We have too many of such already. But we likewise have too many of the other kind. Too many farmers who are content to have their wives worry out their lives in looking after a miserably furnished house and a large family. Too many farmers who finance their labor problems by taking it out of the backs of their boys and girls. Poor coots indeed, that we can equally as well class with the skinflints, for they will average up about right, as the Irishman would say. That Providence has reared out of these uninviting conditions, some big men and women, is no argument for allowing such an irredenda of a carpet-bagging bunch to exist.

Our boys and our girls demand good homes, a good bringing up, and good decent parents. Country life on the farm is one of the grandest places for the early setting of one's life struggles. The country will be the richer, and our national life be purer, by a greater business idealism interjected into our rural homes. Many of our district representatives are doing noble work. Farmers' clubs everywhere are good agents. Churches with wide-awake congregations who demand a live minister, are perhaps the greatest factors. Individual response to the call will accomplish results. Farm papers are in the van of this progress. Poor times can't hurt you, if you are on the job first.

WELLINGTON COMMUNITY CALENDAR

THE Board of Trade of Arthur, Ontario, has published a very interesting Community Calendar, advertising the main public events of the town and county for the year 1919, like the Horse Fair, Poultry Show, Old Boys' Reunion, Stock Judging Courses, Board of Agriculture and Women's Institute Meetings. The Agricultural Representative of Wellington, R. H. Clemens, has secured a number of these calendars to place in the farm homes of the county, having published on the back of each a brief report of his year's work with relation to Crops, Livestock, Soils and in relation to Farm Homes, Schools and Farm Business. This report is most creditable to the work of the Agricultural Office in this county and carries a hearty invitation for the co-operation of the people in the work. Mr. Clemens says:

"I solicit the thoughtful co-operation of every farm boy and girl, every young man and woman and every farmer and farmer's wife in the county of Wellington. Come to my office, phone, write or stop me on the road and place your problems before me. I may know very little about them, but I may be able to put you in touch with some one who does or send you the information. . . This calendar has been issued by the merchants, business men and some of the farmers of Arthur and vicinity in order to advertise Arthur and to make it a better market town and a better town in every way. With your hearty co-operation I believe this can be made the livest town of its size in Western Ontario. Co-operation is the secret of success these days; it is the key to better things. I would like to see the whole district work together in everything. If the people will only work together, this district will go ahead in a way never dreamed of by the most optimistic mind in Arthur."

WHY NOT A UNITED CHURCH?

OF the difficulties lying in the way of church union, against which no sane person seems able to find any reasonable argument, one man has come to the conclusion that the real trouble is purely and simply doctrinal selfishness. This man, stranded in a strange town one Sunday morning, stopped at a corner in sight of three churches considering where he would go for his morning worship. While he waited, sweet and clear on the Sabbath morning air came the music of the Methodists singing, "Will There Be Any Stars In My Crown?" From the opposite corner the Presbyterians struck up decisively, "No Not One," and the Baptists down the street sang happily, "That Will Be Glory For Me."

EDITORIAL NOTES

TWELVE-CENT cattle on grass, eh!

THE world is bound to be short of food for this year.

FARMING looks to be a good business for some time yet.

WHAT a holler the beer and wine fellows are putting up!

MANY of our Parliamentary leaders seem to have lost their pep.

DO not overlook the dues to your farm local and be a good booster for it.

CANADIAN reconstruction is often confused with personal aggrandizement.

POWER machinery on the farm is more urgently needed now than formerly.

THE Housing Scheme may be all right, but many of us don't like the suggestions of the name.

WHY should we have to tolerate a system of star-chamber methods as fines, etc., to finance a new roadway?

A WOMAN walking in the new hobble skirts gives mere man a mighty poor impression of their ability to get to the polls in time.

GOOD roads are wanted by nearly everybody, but grafting via the Good Roads highway is strenuously objected to by all farmers.

PETER McARTHUR is writing a new book. "The Old Red Cow" is already on the market. It is worth reading, although the color-tone of the cover would be as a red rag to the common kine.

WHAT the farmers want to see to-day is a live Opposition in both Ottawa and Toronto. We want more men with lofty ideas of public service.

WHEAT futures need not worry our Governments, for there are many people to be fed and a slim acreage to do it with in the world.

IF D. D. McKenzie, of Cape Breton, is to make as good a record as Hon. Alex. of Ontario, he will have to improve on his first appearance.

ARE rural churches alive to their job or are they, Micawber-like, waiting for something to turn up? It may be better to turn some of them over.

THE returned man should receive every encouragement when he goes out to farm. Read Albright's article in this issue. Also Capt. Lattimer's opinions herewith.

RETIRED farmers, they say, are just chumps when they settle in our rural towns and villages! Are they? Perhaps some of us are hammering them unjustly! Let us hear from you on the subject.

THE *Weekly Sun*, our contemporary, now becomes the organ of the U. F. O. in Ontario. If it can assist all our good farm papers in making farmers' fortunes bigger and farm life more attractive, we welcome it to the field.

THE Republican filibuster in the United States Senate was of a very cheap variety and the recent by-election in Pennsylvania, where a Democrat was elected for the first time in half a century, ought to show the way the common people view it. Let us hear more from the common people.

The Story of Charity and Jonathan

"God's outposts are the little homes"

By ETHEL M. CHAPMAN

WHEN Charity and Jonathan walked over the hills that spring morning and lingered to talk of matters of youth it didn't occur to them that they had a new place in the scheme that makes the world go round. They only knew, vaguely, that the world was beautiful, that the wild thorns were blossoming in the fence corners, that the apple-trees were scattering their pink and white confetti over the grass in the orchard, that swarms of pale yellow butterflies were flitting here and there over the warm earth in the fresh-turned furrows and that birds were calling each other over the hills. And they felt very much in tune with the universe. . . . Later when they came from the church, and opened the little house at the turn in the road and kindled a fire on the hearth so that all the world might see the smoke floating up like incense from their altar, still it only seemed that this was *their* home—a hospitable shelter for the passing guest of course, but first and always theirs, the place that shut them away from the world.

But it didn't work out to be really just theirs. The house was built near to a very bad turn in the road and Charity formed the habit of setting a lamp in the window for any lost or benighted passerby. It came to be called *The Beacon*, the little house standing with its light at the turn in the ways, not that anyone thought of it as a guiding star at all, but because so many people came upon it at a weary and dangerous moment and it always started them refreshed and safely down the road. There was the young man from town riding recklessly up to the very edge of the incline and seeing the light in the window just as his horse fell. There were reasons for his mad riding, Charity knew that as soon as he came to the door; possibly he was trying to get away from something which he hadn't the courage to face. They brought him in, and something in the way the firelight played over the shining silver on the table and into the shadows of odd cosy nooks of the room, in the way Charity's tea-kettle had of singing, the way she pressed her plate of hot biscuits on the stranger's appetite, the happy glow in her eyes over her housewifely ministrations and the security and pride of Jonathan in his home somehow stirred in the young man a faith in the old, simple, enduring ways. When he went out to the highway again he turned his horse's head back to the town and the woman who watched for his return with fear and misgiving knew that he had seen a vision. There was the boy who came to work on a neighbor's farm, who had known only poverty and brutalized associations; he formed the habit of dropping in at the house at the turn of the road of an evening and he learned that there was such a thing as an unselfish living for others, a sweetness that grew with the years. There was the little homesick schoolteacher who got her inspiration and fortitude for the week's work before their open fire on Saturday nights. And there were the neighbors. Some of them hadn't started out as happily as Charity and Jonathan; some of them had increased their flocks and herds and acres at the sacrifice of more enduring things—and they wondered vaguely why they weren't happier. Always they left the little house at the turn of the road with some new discovery and sometimes with a new resolve. . . . . Perhaps fifty years later when a war had left the world sorely in need of healing and rebuilding, a wise student of the needs of the times was remembering some of these visits when he declared that one of the greatest forces toward the nation's social reconstruction was plain, simple Christian hospitality —that the country needed more good homes.

THEY started with the ambition to have a better house as they developed the farm. Every fall saw more cattle standing deep in the aftermath of the meadow, every spring more lambs played on the green velvet hillsides, and one year the builders came and laid a foundation for a bigger house. It wasn't to be entirely a new house; it was rather to be built around the stone chimney and fireplace that had made their first family altar—they had a happy gift of sentiment for the old, first things, you see, but they could build a house modern enough to be a credit to the countryside. When they were settled in their new house the desire for improvement went beyond their boundary fences; they wanted the bad turn in the road straightened and made safe. Strangers, hunters, riders, coachmen had passed over and cursed the road for years, but they never thought to change it; they didn't live there; they had enough to do to keep up their own highways; it remained with Charity and Jonathan to see that the road past their own place was made good. They never dreamed that the new world which opened to them on the hills that spring morning would be the means of making them enthusiastic supporters of public works.

Then the children came. It was all very well for the father and mother to rapturize to each other that there had never been such wonderful children, to marvel at the miracle that they were really *theirs*, but long before little Jonathan had kicked his feet free of his long skirts they had agreed that he would be moving things in the world some day—and the world seemed just as much in need of movers when James and Charity and Arthur were born. For Jonathan and Charity had not been without their own ambitions. While it seemed to them now that they were just where they belonged they had had dreams of other things in their earlier days. Jonathan had wanted to be an explorer and a doctor and a preacher, at different stages of his career. And Charity, well there weren't many things a girl could do in those days, but she had had fleeting glimpses of herself as a prima donna stirring masses of people with her singing, or a missionary carrying a message to thousands of enraptured heathen, or a Florence Nightingale floating down long hospital wards dispensing her gift of healing wherever she went.

"The ancient bridegroom
and the bride
Smiling contented and
serene
Upon the blithe bewildering scene,
Behold, well pleased, on
every side
Their forms and features multiplied."

Any one of these might have been realized if she hadn't met Jonathan, which, considering everything, would have been unfortunate. For here were four new lives now inheriting hers and Jonathan's ambitions combined, growing up to go out and do the things they had wanted to do, and here were she and Jonathan, with some experience of life at least, to encourage and help them from their cradles up. They would lack no chance that could be given them. *So the world makes its greatest progress—through the desire of people to give their children the advantages they have missed themselves.*

EVEN this did not stop with the family. If they had been interested before in a better road, now they wanted a better school. The rich old bachelor neighbor cherished a bitter resentment at every increase in the school taxes; not so Jonathan—it was his most important investment. And they wanted a better church; they wanted a right community. Parents in the city try to move to a more "desirable" community as their children grow up. You can't move so easily if you have a farm, and you might have to go a long way to *find* the kind of community you want; there is nothing to do but make one. It influenced the way Jonathan voted. It gave him a far-sighted probing into public questions to see how they would affect the next generation. And with it all he had to farm better because he had to save money against the needs of his family's education. Jonathan became a man to look to in the community—a successful farmer and a public-spirited citizen.

Then the time came when the children began to leave them. Some people consider this the price people pay who raise their family for the world instead of for themselves, but to Jonathan and Charity it was a proud contribution to life. And perhaps because his father had wanted to be a doctor and his mother had coveted the gift of a Florence Nightingale, young Jonathan set his heart to being a doctor. It may be because his father had had visions of being a preacher and his mother had wanted to take a message to the heathen, James went into social service work in other fields. Perhaps because her mother's voice when she sang them to sleep had carried some of the sweetness of the dream of the prima donna, and because the music of her father's violin had been among her earliest memories, little Charity was destined to be a musician. And no doubt because his father and mother had made such a success of farming and making a farm home and had been happy doing it, Arthur would be a farmer.

But the chain didn't end there. While Jonathan was restoring broken bodies to health and James was working for better living conditions in a crowded city and Charity was bringing happiness into thousands of lives through her singing, Arthur was not only making the earth yield her increase. When Jonathan came home and told of the miracles performed in a city hospital, Arthur was thinking, "Why can't we have hospitals in the country where people can have the same chance for life and health? Why can't country children have the same public health protection as the poorest child in the crowded parts of the city?" And he set to work to stir a movement for a community hospital, and a school nurse. When James told of his work concerning recreation parks and sweat shops and child labor, Arthur thought, "Why can't we have someone organizing play here in the country where most people have less real play than the poorest laborer in town? Why shouldn't something be done about the child-labor and woman-labor on the farms in the backward sections of our own counties?" And his enthusiasm for a community centre spread to every minister and teacher and public-spirited man and woman in the neighborhood. When Charity came home and they all went into the parlor while she sat at the old piano, and poured all the sweet, strong, marvellous quality of her beautiful voice into the songs they loved, it was Arthur who was moved most. "Couldn't you take a month," he begged, "and come out here and sing like that to the people in every little church and school house through the

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How Burbank Remakes Vegetation

By R. RUSSEL FLEMING

LET some artist in the wildest flights of his imagination conceive a flower combining in itself characteristics never before seen in combination. Let him stipulate how tall it shall grow, what kind of leaves it shall bear, the color and size of its flower, the width of its stalk, its manner of reproduction and the climate in which it shall grow. Let him pass it on to Burbank and give him his time—five, ten, fifteen or say twenty years. At the end of this period let the artist pay the "master" a visit and he will see this wild product of his one-time flights of fancy become a living thing of beauty before him.

Many like to speak of Burbank as "the wizard of California," others refer to him as the "King of Horticulturists," or other eulogistic titles. Personally, I like to think of him as plain Luther Burbank—a plain, ordinary, everyday farmer, if you like to call him so, who began life by breaking the hearts of his family and parents, by leaving the town and city with its "wealth of opportunity" to bury himself on a little farm; and who lived to see the day when the workshops and factories, schools and legislatures of a whole State would close their doors on "Burbank Day" as a means of recognizing his contribution to mankind.

Born in the little town of Lancaster, Mass., just outside of Boston—in an environment that included in its inhabitants such a notable figure as Emerson, Burbank early showed a great desire to be delving into the mysteries of nature around him. Nothing seems to have brought more delight than a tramp into the fields, from which many flowers would be gathered and carried home. At an early age he was sent to work in a factory in Worcester, where he seems to have displayed considerable mechanical ability, being credited with having made an important invention for cheapening the process of manufacturing a plough. And when, after becoming disgusted with indoor factory life with its long hours and meagre pay, he decided to turn to market gardening, it is not to be wondered at that his parents and relatives considered his actions as at best unprompted by wisdom.

Adds $20,000,000 to National Wealth

Potatoes were soon growing on the little patch of land he acquired and but a short time later a discovery was made that won him early fame and gave to the world the Burbank potato. Amongst a dozen potato tops, the curious phenomenon of one of them bearing a seed-ball was noticed—which so interested him that he put it aside and developed it; and, I suppose, in his precarious financial condition, when a local seedman came along and offered him $150 for it, he thought he was about to enter the realm of high finance. It was only the Burbank potato—that was all—a potato that "besides disproving the assertion that a potato famine was at hand because of the steady deterioration of the world's stock, has added to the wealth, of the American nation alone, upwards of $20,000,000.

Unfortunately, however, a sunstroke soon after forced him to look to some other climate, where there would not be as much danger of a return attack. So we find him next, at the age of twenty-five, settling down in a quiet little valley about 50 miles north of San Francisco—a valley then unimproved but now a rich fruit and farming country.

Delivered the Plum Trees on Time

Here for several years a struggle went on to get a footing—just that sort of an early struggle that seems to have molded most of the world's great men. But on account of his recent illness and a naturally none too robust physique, difficulties with him were of a peculiarly aggravated nature. After gathering together a few dollars he was able to locate on a few acres and began soliciting orders as a nurseryman. Then one of those opportunities came along that comes to most people if they are only ready. Burbank was one of those men who make it their business to be ready. A certain man wishing to plant an orchard was in need of twenty thousand plum trees, a request, under ordinary conditions, not out of the way. This particular orchardist however had to have them in nine months. As the request was made in the fall the young trees could not be planted till the spring and two years after that would be needed to get them ready for transplanting and delivery. Nobody could fill the order. Burbank was offered it and jumped at the chance. It is said of the Bethlehem Steel Co. that its marvelous growth under the guidance of that genius, Charles M. Schwab, has been due to the fact that they, more than any other firm in the steel business, could take huge contracts and deliver them on time. Consequently when the war broke out, time being the all important consideration, they got the contracts. Now, I suppose, if you want young chickens running around when the snow is banked against the house, you would take the mother hen and set her in an old box on the kitchen stoop; and if you want luscious tomatoes to eat when other gardeners have not yet thought of even planting their seeds, you will go to a greenhouse or similar artificial aids to realize your wishes. So too, if you want young plum trees out of season, you have got to resort to similar artificial means. That is just where Burbank scored. Almond trees were very fast growers and could be planted immediately. Plum branches could be grafted on to them. That is all. In nine months the trees were delivered—trees which today compose one of the excellent orchards of California.

This early success led to others; he was now netting close to $10,000 per year. But once more his plan changed. The problems of the nursery business had led him into a study of the problems of plant breeding. In connection he read widely and deeply the writings of Darwin, Tyndall, Huxley and others, all of whom provided for him much useful information on the subject of breeding operations in general and plant breeding in particular. It was settled! He would now desert the nursery business and devote his time and efforts exclusively to plant breeding. Ten thousand a year or no ten thousand a year, nothing would stand in the way of furthering his one ambition. And once more his relations and friends stepped in to pronounce him little short of "daffy." Former Premier Asquith of Great Britain has said that all of the important steps of his life were taken against the advice of his elders. So it was with Burbank. And what, I wonder, would have been the loss to the world had it been otherwise? But now we must turn to the opening of that chapter in his life which was to produce benefits for the world that can never be estimated.

Plant breeding being now his sole object in life, we turn to him as our master to unfold to us in his own words the inner secrets of such a complex subject. "The foundation principles of plant breeding," he says, "are simple and may be stated in a few words: The practical application of those principles demands the highest and most refined efforts of which the mind of man is capable; and no line of mental effort promises more for the elevation, advancement, prosperity and happiness of the whole human race. *Plant breeding is in its earliest infancy.* Its possibilities and even its fundamental principles are understood by but few. In the past it has been mostly dabbling with tremendous forces which have been only partially appreciated; and it has yet to approach the precision which we expect in handling steam or electricity. Notwithstanding the occasional sneers of the ignorant, these silent forces embodied in plant life have yet a part to play in the regeneration of the race which, by comparison, will dwarf into insignificance the services which steam and electricity have so far given. The chemist, the mechanic, have, so to speak, domesticated some of the forces of nature; but the plant breeder is learning to guide even the creative forces into new and useful channels. This knowledge is a priceless legacy, making clear the way for some of the greatest benefits which man has ever received from any source from the study of nature." After listening to such a statement from a man who has spent the best part of his life silencing skeptics, who can but feel that nature has issued the race a challenge to bring forth the flower of its genius to unravel the many hidden secrets that seem to surround us on every hand?

"From his own catholic point of view," a biographer, H. S. Harwood, tells us: "Burbank's mission among men is to do the greatest possible good to the greatest possible number of the human race." Briefly his aim has been as follows:—

1. "The improvement of old varieties of fruits, flowers, grasses, trees and vegetables.

2. The merging of wild, or degenerate types of plant life with tame, or cultivated ones, in order that the union may be of service to both.

3. The creation of absolutely new forms of life, unknown to the world before—the highest act of the plant breeder."

Lead Nature With a String

Of course breeding of anything implies an outside agency who directs the union, according to intelligent principles; and in so doing the process of selection follows the constant choosing of the fittest in order that it may survive. The principles underlying all forms of life are the same, whether plant, animal or human. And that is why the man who in a simple way is raising hogs or sheep or chickens, or the university scientist in his study of eugenics, each and all turn their steps to this great waster of the art of breeding. It was the opinion of the ancient philosophers that nature stumbled; that she was guilty of many imperfections and that it was the duty of art to set her right. Consequently in their painting and sculpture they sought to improve on nature. The mere reproduction of nature by them on canvas or in stone exerted no appeal; that would be merely photography—so with Burbank. *Early observation taught him that nature was ready to follow if only intelligently led.* He had but to use his imagination to form conceptions of an ideal in his mind—and the union of the elements of perseverance and time would achieve his ambition. That is why his creations have been so successful. He is absolutely unfettered by traditions of any kind. The fact that things have always been done in a certain way influences him not a whit. *He will grow for you potatoes or tomato vines; roses without thorns; flowers with or without scent; plums with stones or without; almost, you might say, anything that one could wish for. All he needs is nature herself and time.*

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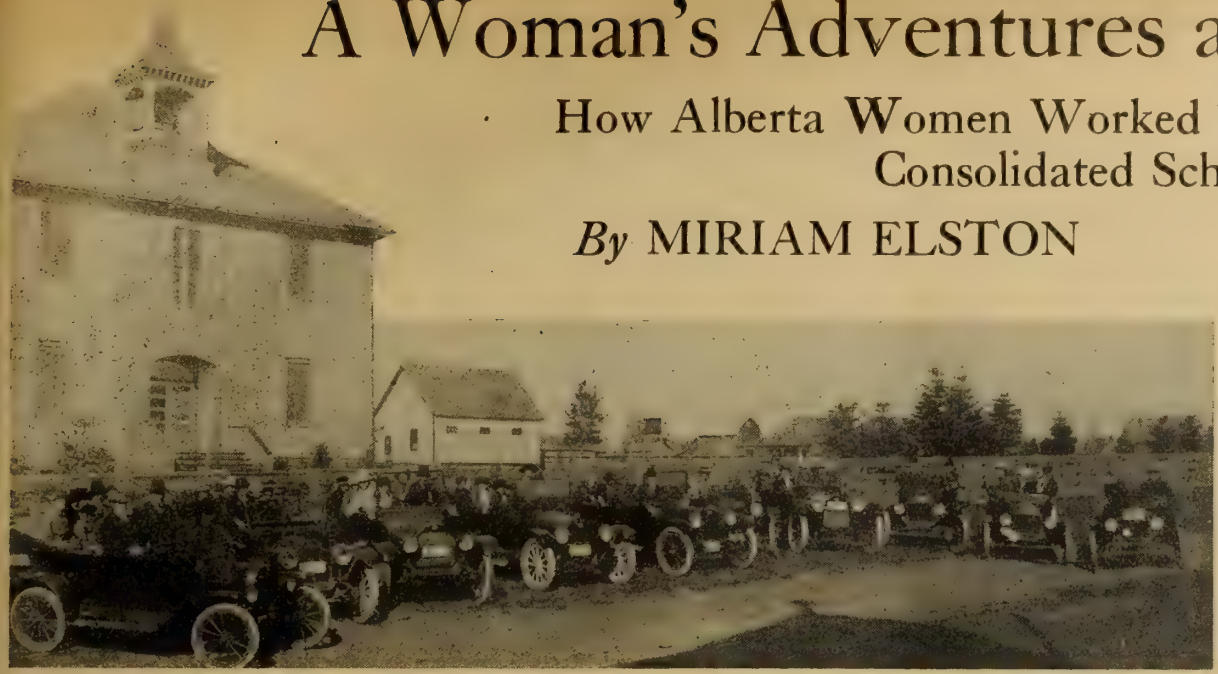
Luther Burbank's home in California

A Woman's Adventures as School Trustee

How Alberta Women Worked Toward the Rural Consolidated School

By MIRIAM ELSTON



Automobiles ready to start from the school on a geological tour

"THE prize at the end of our rainbow of hope is not a pot of gold but a rural consolidated vocational school," declared Mrs. Geo. Root, of Waterglen, Alberta, when speaking of her adventure, in company with another woman, into the realm of public school trusteeship.

There has been so much doing in Mrs. Root's term of trusteeship that the story savors strongly of romance. To make one rural public school the most efficient instrument of education possible under existing circumstances would seem a fairly large problem for two women to undertake, but the ambition of these women trustees did not end there. They were ambitious to so fulfil all the duties of their office, to so take advantage of every opportunity that their position offered, that a large community, consisting of six school districts, might become enthused with a desire to form a consolidated vocational rural school. And I must add that of these several school districts one was composed of people of Russian-German origin, one of Swedish, one of Hungarian, one of Norwegian, one of Welsh origin, and one district of a mixed population. It will easily be understood that there might be easier tasks than to mould this heterogeneous mass of population into one whole that would see eye to eye in the matter of forming a consolidated school.

"It has been said by someone," remarked Mrs. Root, "that some people take themselves seriously, and it is certain that the two women elected to the trusteeship of the Waterglen district did take themselves very seriously, and they were not without their ideals on the subject of rural education."

At the first meeting of the newly elected trustees it was decided by these women that they would not antagonize the men who opposed woman officials by raising the rate, which at that time was $12.80 per quarter section. They thought it feasible by the development of self-help, efficiency and economy to do all the things which they had planned to do without raising the rate.

The trustees turned their attention first to the condition of the school premises. They were very sure that they were not in any ideal condition. One of the trustees happened to come across the schedule by which the State of Georgia had standardized her rural schools, and this was used as a standard of measurement. It took a year and a half of earnest effort on the part of the school board to secure and pay for all the additional equipment, and to renovate the school premises to come up to the standard. And they weren't content with reaching the standard. In many items they excelled it. The school premises became a subject of pride throughout the whole district.

Meanwhile every encouragement and assistance had been given the teacher in promoting vocational branches, and much had been done to stimulate activity along these lines in the neighboring districts by arranging for school industrial exhibits. Amongst the articles on exhibition were bird houses, rustic easels, picture frames, milking stools, baskets woven from willow, mats made from birch bark and woven from prairie grasses, articles in knitting, crocheting, embroidery work, stenciled curtains and cushion covers, cooking, plasticene models, maps, potted plants, bouquets and vegetables.

The children and parents of the different school districts were also brought together for oratorical contests. Prizes were offered, and two children from each district were allowed to compete. Speculation ran high as to which districts would win the places of distinction, and the results sometimes awakened an added respect for what were supposed to be the more backward sections.

It was presently apparent that the efforts of the women trustees had aroused a very considerable interest in school affairs in all the different districts, and they fondly hoped that the time was ripe for consolidation, but when the subject was approached the women found that they were up against a stone wall.

Pupils and parents listening to a scientist at a coal mine and a stone quarry

The children would have been delighted to go to the larger school and to work together, but each different nationality had different views on the subject. For the present the scheme had to be abandoned.

Making the Schools a Community Centre

BUT anyone who knows Mrs. George Root will tell you that she would not be likely to accept defeat. If a longer and harder road had to be travelled in order to reach the desired destination she would start at once on the journey. And in this case Mrs. Root and her co-worker were, within a few weeks, planning a get-together movement for the grown people.

"There is invariably a laugh when I tell of our first effort along this line," Mrs. Root declares.

And it must be admitted that the initial feature was somewhat unique. The women had decided to use the talents which they found in the districts. A man who resided in one of the districts had formerly been a barber. He was willing to act as instructor for the first evening. He demonstrated how hair should be cut, shears sharpened, and razors honed, gave recipes for hair shampoo and face lotions.

Then he set his pupils to work. Almost every man present barbered some other man, and the mothers cut their children's hair.

And when you understand that out in this isolated country district the men had often (particularly in busy seasons) to depend on his neighbor or his hired man to act as his barber you can readily understand why the first night's instruction was so heartily responded to by the men, and why the whole community looked forward with interest to the next evening's instruction which the women would provide for them.

The women's next find was an Englishman who had spent four years at basketry in England, and while he said that Alberta willows were not as suitable to basket-weaving as the English willow, yet he consented to act as instructor for an evening, and bringing some Alberta red willow, which he had prepared the previous spring, he explained when to cut the willow, how to prepare it, and demonstrated how to weave baskets. At the first industrial exhibition of school work held after this demonstration there were a considerable number of baskets shown, some of them almost perfect in every detail. And the children who made the baskets had received no other instruction than that offered on this one evening.

Wool was the subject of the third evening's instruction. A man was found in the neighborhood who had been an extensive sheep breeder in the United States, and he gave an interesting talk on sheep-breeding, and marketing of wool. After the address a number of instructors took the platform. One lady demonstrated how to card wool, another how to spin the carded wool, and a third operated a knitting machine. Different kinds of hand work with wool were also taught. Nor were the instructors in this work all women. One man had on exhibition a double woven mitten, which the women declared was the warmest mitten for outdoor work that they had seen.

It was found that many persons who resided in the district were well versed in some branch of vocational work, and the women had no trouble to obtain instructors. One man owned some beautiful tapestry he had made, the manufacture of which he was willing to demonstrate; there was also a taxidermist willing to give lessons, a photographer who gave lessons in amateur photography, and a cobbler willing to take his turn on the platform. Indeed it seemed that the subject covered would take a fairly wide range.

Using the University Extension Service.

BUT although the women made as full use as possible of all local talent they did not neglect to take advantage of other opportunities that offered. The

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The party after listening to a geological lecture at a gravel-pit. One of the woman trustees is standing just above the X in the picture

10 Searching Questions About the Maxwell and 10 Frank Answers; Read Them, for They May Decide Your Choice of a Car

Q.—Reduced to one point what is the single greatest thing you can say about the Maxwell?

A.—It is reliable.

Q.—What makes it reliable?

Q. The chassis was designed five years ago to be extremely simple. Then we kept on making and making Maxwells all alike on this chassis year after year until now we have made 300,000 of them. Our policy is to do one thing well and thus obtain perfection.

Q.—Have you changed the original design any?

A.—Not in any single fundamental. We have added an improvement here and there from time to time—but no changes from our original program.

Q.—Have there been any great chassis improvements in the last 5 years?

A—We believe not. There have been multi-cylinder cars and multi-valve cars; but in a car sold in Canada under $1300 we do not believe them to be practical.

Q.—How much of the Maxwell car do you build?

A.—We believe that we manufacture more of the parts that go into our car than any other manufacturer.

Q.—Why do you do this—can you not buy parts from others cheaper than you can build them?

A—In some cases yes; but not so good as we can build them. In other cases no, for besides our 7 great plants in the United States—an investment that runs into many millions of dollars—we operate a big Canadian plant at Windsor, Ont., carry a tremendous inventory, have a rapid "turnover" and a large one. Besides, we make parts for cars other than our own including some that cost in excess of $4000.

Q.—Has the Maxwell every modern equipment?

A.—Yes, even including the carrying of the gas tank in the rear.

Q.—Have you improved the appearance of the Maxwell any?

A.—Yes. We have made a vast improvement in the last few months—so much so that many persons thought we produced a new model. Note the illustration. This is drawn from a photograph without the slightest exaggeration.

Q.—How about parts?

A.—There are many hundreds of thousands of dollars in parts carried by our Maxwell dealers all over Canada.,

Q.—Will you reduce the present price if I buy a Maxwell now?

A.—No. The present price is guaranteed until July.

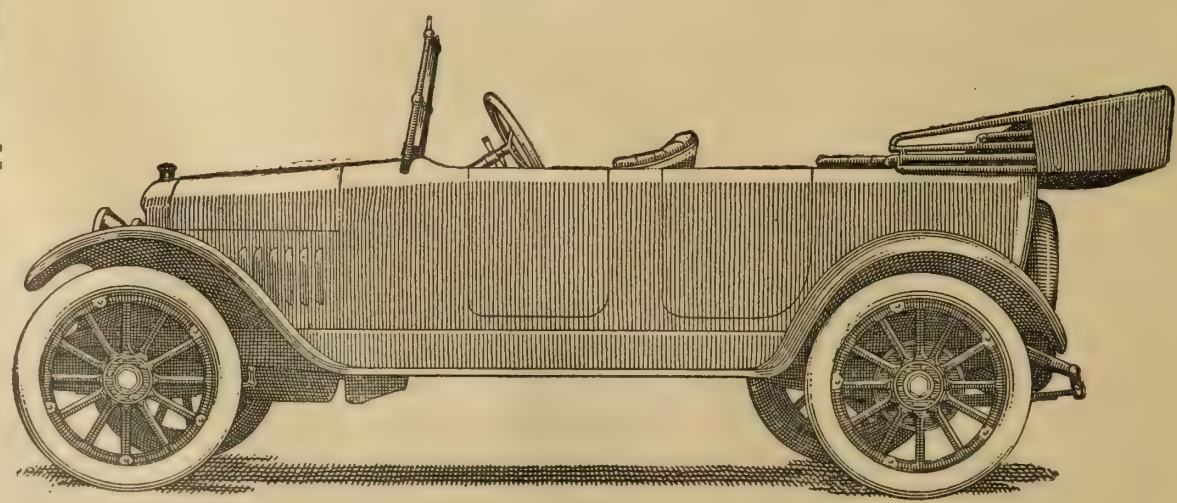
Price $1275 f. o. b. Windsor, Ont.

War Tax to be added

MAXWELL MOTOR COMPANY OF CANADA, Limited

WINDSOR, Ont.

More miles per gallon
More miles on tires



Will Egg Production Pay? Yes if production marketing and consumption are studied

Production Always Important

The keeping of poultry will be consistently profitable and pleasant if breeding, feeding, housing, sanitation and general management are studied and practised. Not that it is an extremely difficult business, but it cannot be conducted profitably unless one is prepared to study it, carefully plan the work and then work the plan.

It is essential that chickens be hatched as early as possible, say in March, or not later than the end of April. Pullets frequently produce over $1.00 worth of eggs more than yearling hens. Most of this favorable difference is accounted for in winter egg production, when eggs fetch high prices.

A pair of hens at the Guelph Agricultural College produced 166 eggs each as pullets, 144 eggs each as yearling hens, and 127 eggs each as two-year-olds.

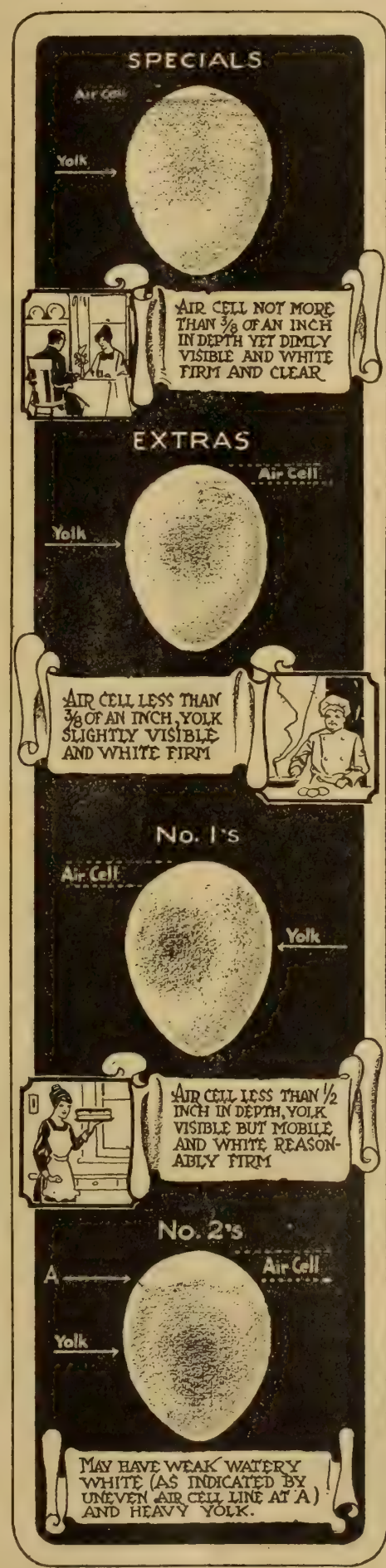
During November, December, January and February they produced as pullets 40 eggs each, as yearlings 20 eggs each, and as two-year-olds 5 eggs each.

Market the hens having yellow legs and beaks after June 1st. They are "boarders."

Marketing Needs More Study

An official of the Dominion Department of Agriculture is in England at the present time closely investigating the market in the interests of Canadian egg and poultry producers. The home market prices for eggs will, in all probability, depend upon the price of eggs for export. Now, the law prevents the export of "Number 2" eggs, so that the way to secure enhanced prices for eggs is to market them in No. 1 condition or better. The average owner of a flock of chickens would find it pays to sell his eggs on a graded basis. Know the condition and age of the eggs you are selling and ask something better for your best eggs than the "flat" price which the dealer must offer to protect himself when buying eggs which may be a mixture of all grades.

The "Number 2" egg is the result of the eggs not being gathered daily or twice daily, of having been kept in a warm place or taken from a stolen nest, or from the one or two days' attentions of a broody hen. Of course, slowness of the market is also accountable, but it must be remembered that every egg is fresh when newly laid—that it does not improve with age—and that there is always a good market for the best eggs.



Definitions of Grades

SPECIALS—Eggs of uniform size, weighing over 25 ozs. to the dozen, or over 47 lbs. net to the 30-doz. case; absolutely clean, strong and sound in shell; air cell small, not over 3-16 of an inch in depth; white of egg to be firm and clear, and yolk dimly visible; free from blood clots.

EXTRAS—Eggs of good size, weighing at least 24 ozs. to the dozen or 45 lbs. net to the 30-dozen case; clean; sound in shell; air cell less than 3/8 inch in depth; white of egg to be firm, and yolk slightly visible.

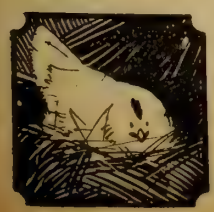
NO. 1's—Eggs weighing at least 23 ozs. to the dozen, or 43 lbs. net to the 30-dozen case; clean; sound in shell; air cell less than 1/2 inch in depth; white of egg to be reasonably firm; yolk may be quite visible but mobile, not stuck to the shell or seriously out of place; cell not necessarily stationary.

NO. 2's—Eggs clean; sound in shell; may obtain weak, watery eggs and eggs with heavy yolks, and all other eggs sound in shell and fit for food.

Stimulate Egg Consumption

One of the best ways to keep "Number 2" eggs off the market is for the farmer or producer to eat more eggs himself. Eggs are life-savers and growth promoters. The egg yolk is about 50% fat, and possesses superlative nourishing qualities. Along with milk and vegetables, eggs are classed as "protective" foods, because they maintain the correct "balance" of a human being's food ration. After eating eggs you do not get hungry again so quickly as with other foods, and they have growth-promoting and health-preserving properties that are absolutely essential. This is particularly the case with children.

Set a good example. Eat at least an egg a day.



The Ontario Department of Agriculture

Hon. Geo. S. Henry, Minister of Agriculture — Parliament Buildings, Toronto

A Question for Farmers

Why Was the Tariff Increased on Woollens in 1904 ?

THE answer to this question, as published in THE FINANCIAL POST, is of importance to every Farmer in Canada.

THE FINANCIAL POST is the Canadian business paper that believes in a tariff for revenue and for protection, but that **does not say that the present tariff is right.**

Every alert farmer in Canada is interested in the tariff. You are interested in the tariff, and more than ever to-day.

A tariff for revenue, that reduces to you the cost of running the country, a tariff for protection of the country's young industries including such industries as the woollen industry which is first and foremost a farmer's industry, these ideas of tariff interest you, and affect your pocket.

Discover for yourself both sides of the question as fairly and squarely presented in THE POST, and weigh the for and against from the facts.

THE POST has been active in urging that **Sir Thomas White should take up this matter of tariff at once**, calling together representatives of the farmers, the manufacturers, and working men to a conference at which there should be appointed a commission to look into and revise this tariff matter.

This suggestion THE POST bases upon careful enquiry into both sides of the question. You will find it both interesting and profitable to follow THE FINANCIAL POST each week on tariff matters now that the tariff is getting so vitally important to your interests in the business of farming. On March 8th a leading article appeared in THE POST entitled **"The West Demanding That Government Reduce Tariff Immediately."**

The Post Shows The City Man The Farmer's Viewpoint

BELIEVING that the solution of the tariff problem in Canada depends upon the establishment of a common ground of understanding between the various elements—agriculture, labor and manufacturing—THE FINANCIAL POST published on Jan. 25 a statement of the farmers' views of the economic questions involved, as prepared by E. C. Drury, vice-president of the United Farmers of Ontario.

That this service is appreciated is evident from the letters received commenting on the article by Mr. Drury. This long article was closely read by many leading business men who appreciate the fact that anything which helps the farmer is important to the city man also. Equally important, of course, to the farmer is anything which helps the city business man who markets the farmer's produce. The interests of both are closely wrapped together.

Are the Manufacturers' Profits Too High?

At the Eleventh Annual Convention of the United Farmers, and the United Farm Women of Alberta, held at Edmonton recently, an undercurrent of opinion that the manufacturers' profits are too high was noted by F. W. Crandall, Farming Specialist of Calgary. He wrote in THE POST of February 8th, an interesting article on events and discussions at this Convention.

This is the convention at which Vere Brown, of Winnipeg, received almost an ovation for his address on the Canadian Banking System.

A very few weeks' study of THE POST contents will show you that THE POST believes in giving the truth. The arguments of the farmers towards heavy tariff revision are stated as frankly as are the arguments from the other side in favor of a continuation of high tariff.

By studying both sides fairly you add strength to your own arguments in favor of farming interests.

THE OUTLOOK FOR FLOUR MILLING

Wheat grower, does that headline interest you? What do you know about it? Would you like to know more—to be kept informed on it every week?

In THE FINANCIAL POST each week appears an article written by an expert who is in daily touch with affairs affecting Canada's flour production and market wholesale and retail.

The success of the milling industry means a home market for your produce. It means a home supply for feeds. It will be of great importance for you to follow from week to week in **THE FINANCIAL POST the progress made in business for the milling industry.** From THE POST you will be able to get quickly the facts of the whole situation right down to the minute, for THE POST has the editorial organization to give you this service.

FARM LOAN FINANCING IN MANITOBA AND SASKATCHEWAN

Hon. G. A. Dunning, Provincial Treasurer of Saskatchewan, finds the farm loan scheme working well in that province. An article on the subject appeared in THE POST on Feb. 8th, and in THE POST from time to time you will find the latest facts on the progress of similar projects.

For instance, in THE POST of March 8th there appears an interesting article on the cost to the tax-payer of the Manitoba Farm Loan Funds, a matter on which as a farmer you will want to know the facts.

The Post—The Financial Paper For Farmers

In THE FINANCIAL POST each week you find the facts affecting both the farming and the commercial business of Canada. To keep in touch with these facts most certainly means money to you. To take no account of them may mean loss to you. To dig them out for yourself from the daily press means a serious cost in time, and the daily press is often far behind THE POST in announcing really vital business news.

It will cost you only $3.00 per year to have THE POST each week—a big, fair-minded, readable, financial paper that keeps you in touch with Canadian business affairs without for one week neglecting the farmers' point of view. To order THE POST and secure this excellent service, just fill in this form, and mail it to-day:

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OUR FEDERAL PARLIAMENT

Doings On Ottawa Hill

BY OUR OWN REPRESENTATIVE

A Lively Session Ahead

By T. M. FRASER

THERE are doubtless many readers of FARMERS' MAGAZINE *who wonder "what they are doing at Ottawa"; and who would like to thresh out the small amount of wheat from the vast amount of chaff which is blown through the air by the medium of Hansard, and by the columns of matter which appear in the daily press. Anyone attempting to follow the debates, either from a seat in the press gallery, or through the reports, must wonder why counsel should so often be clouded by words; and why men should talk so much when they get into Parliament, and say so little. Reviewing the day's work after the Speaker has oracularly announced: "It being six o'clock I shall now leave the chair," one is reminded of a Western wheat field after threshing is over. There is an enormous stack of chaff, which dwindles into insignificance the wheat which has come through the separator. It will be the object of this department in* FARMERS' MAGAZINE *to act the part of separator.*

IT is well on to a month since the opening ceremonies took place. Parliament only met to adjourn; because of the passing from the scene of his triumphs of the Old Gladiator who, as Hon. Mr. Lemieux so finely put it: "*Without bitterness saw himself disarmed as he was about to descend once more into the arena.*" The active work of the session began on February 25th, with a laurel wreath occupying the chair on the centre of the Opposition side of the House which had been filled by what even his bitterest political enemies could not but acknowledge had been a great figure. And great figures are not common in our Canadian Parliament.

Perhaps every generation is inclined to dwell with emphasis on the past when reviewing its great. History, even though not very remote, casts a glamor on personalities, and we are apt to repeat: "There were giants in those days"; but even their contemporaries were willing to agree that two Canadian statesmen—Sir John Macdonald and Sir Wilfrid Laurier—stood far apart from their fellows. The blank made by the passing of Sir Wilfrid Laurier is the more pronounced because, while there are some able men on both sides of the House, there are none of whom we could say without hesitation, as could be said of both Macdonald and Laurier, that they would be outstanding figures in any Parliament in the world. Such men come only at very long intervals in a new country such as ours, which is still rubbing off its corners; and it is only too apparent that there is no one now in sight to fill the vacant chair.

Parliament is still hard at the debate on the address. It is the first free-for-all, where any member may get off his chest whatever has been burdening him. It will go on, practically, so long as there is a member who has something which he wants to add to the world's stock of knowledge, which is already pretty large. Although it sometimes drags out its length to wearisomeness, it is not all waste of time. It gives the Government a chance, for example, to see how the wind is blowing before it brings down its budget. It enables the dark horses in Parliament to show their paces; and determines to a considerable extent where they shall be "placed" in the deliberations of Parliament for the rest of the session. Speaking for the press gallery, it also gives the surfeited reporter a line on future occasions when he can desert his seat to attend to more important work than listening through a long afternoon to some man who has stamped himself as a bore, and from whom no good "copy" may reasonably be expected.

It May be a Gale

Speaking of how the wind is blowing, the most pronounced slant is a rather strong low-tariff breeze from the West, which may develop into a gale. The Captain is away, and the ship of state is in charge of the First Mate. Every day when he comes on deck, he taps the glass anxiously and scans the horizon.

The crew is not altogether satisfied with the progress of the Government barque. Last session the war was still on; and although some of the Westerners were almost bursting to utter the thoughts that arose in them, they refrained, rather than embarrass the Government. The feeling this year is that the lid is off. The attempt to postpone discussion on highly controversial matters like the tariff has not been favorably received. It was the desire of the Government not to open the tariff at all, until the Peace Conference had ended and the Premier returned; and after that, until the problems of reconstruction had been disposed of. But to a good many, that seemed too long to wait. Reconstruction, so far as it has developed, looks like a long job. They would like to reconstruct the tariff along with other things.

The Western members are practically a unit for tariff reduction. They have not, at this writing, agreed on all they want; their program may expand as they go along; but, first and foremost, that 7½ per cent. war tax must come off—all are agreed on that. Next is a removal or a pronounced lowering of the duty on farm implements. And, in this connection, a somewhat surprising thing happened when Mr. Cockshutt, the High Priest of Protection in the House, said in his speech: "I know that the tariff has some inequalities. I know that it can be improved in some respects; and I, for one, am ready to make concessions. I do not expect to get all I want. The whole world goes on compromise. . . . I would not be surprised if after the Minister of Finance has presented his budget speech and after he has had the sage advice of the members of the Opposition as well as of honorable members on this side, he will bring down a tariff that will be suitable to my honorable friend from Brome, who I know is one of the hardest men to please on that side of the House because he thinks everything about a tariff is wrong."

As "my honorable friend from Brome"—Mr. McMaster—had made a pretty strong speech in favor of tariff reduction a day or two before, this speech of Mr. Cockshutt was generally taken to indicate some softening of heart on the part of the Protectionists, and that their spokesman was holding out the olive-branch. A day or so later, when he read in cold type what he had said—or possibly when he had received some communications from his friends—it occurred to Mr. Cockshutt that he might have gone too far; so he gave an interview intimating that what he had said in the House was not meant to be taken seriously. But, in this case, the spoken and printed word remains; and Mr. Cockshutt, much against his will, is being regarded and quoted as in a fair way to being a convert who may bring his fellow-manufacturers into the light.

It is evident that there is a certain amount of receding from the hard and fast attitude on the tariff which has characterized the manufacturers as a body in the past. There are implement manufacturers in the House, for example, who will tell you that they believe

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the tariff should be retained, but that it must be reconstructed on a more scientific principle. They appear impressed with the conviction that there must be more tolerance between the people in the different parts of Canada; and that no one element in the population can any longer shape its policy in a spirit which is either selfish or dictatorial.

There are several obvious reasons why the Government is anxious to leave the tariff alone as long as possible. It is a highly controversial subject; and with the Cabinet composed of men who took widely divergent attitudes on it in the past, its discussion would be very much like bringing an unlighted candle in where gunpowder is stored; the whole structure might go up with a bang. There is also the consideration of revenue; and it is this which, judging from some of the speeches made, seems to particularly impress those in the Cabinet who were Liberals in their previous political incarnation. Mr. Carvell, for instance—who used to be called "Fighting Frank" largely because of the hot speeches he made on the tariff—made a most dolorous speech on the job confronting the country of making ends meet, with a prospective and unavoidable expenditure one hundred millions more than the visible revenue. He left the House and the country with the question: "Where is this extra hundred million to come from?" but the plain inference from his address was that it must come largely from the tariff.

The country may prepare itself for some reduction in the tariff; and may also get in tune with the general feeling that the future trend must be downward. This points to the desirability of having a commission which shall go into the matter scientifically, and not take the protests of any industry, that they must die without strong tariff succor, without investigation; nor, on the other hand, follow the suggestion of those Western extremists—there are a few of them in the East also—who would wipe out the tariff at a stroke.

The writer of this correspondence is the resident representative of FARMERS' MAGAZINE *in Ottawa. He is a well-known Western farm paper editor whose sympathies and viewpoints are most essentially with agriculture. His reports on political movements will be unbiased. These will appear in each issue during the session.*—EDITOR.

A LIVE FARMERS' CLUB

THE Beaver Lodge, Peace River, Alberta, local of the U.F.A., with 30 members, is so alive that it has started a campaign to get the Dominion Government to have the E.D. & B.C. railway improved and extended.

Of the 407 miles reaching from Edmonton to Grande Prairie town only fifteen miles is through the settled part of the Grande Prairie district, whose settlement more or less closely occupies an area about twenty-five per cent. larger than the province of Prince Edward Island. Sixty miles of easy construction would carry it to the B.C. boundary and this is what the farmers are desiring; also the laying of steel on the graded right of way from Spirit River to Pouce Coupee. The B.C. Government is preparing to push construction this summer of the Pacific and Great Eastern, which follows up the Fraser Valley from Vancouver and is expected to link up somewhere along the Provincial boundary with the E.D. & B.C. when that road is completed. This would give these farmers direct coast connection, cutting an enormous slice off transportation charges on both sales and purchases and enabling the Peace River country to strike a pace of gigantic development.

Figures compiled by the Dominion Bureau of Statistics show the immense quantities of rubber and gutta-percha imported into Canada for home consumption. In 1916 the value of these imports was $10,270.887; in 1917, $14,-139,702; and in 1918, $11,979,764.

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Flowers For Pleasure and Profit

By ELIZABETH L. HOUSSER

ONCE more the seed catalogue has appeared in the land to tantalize the already inveterate flower gardener with visions of, so far, unattained beauty of blue forget-me-nots that really bloom in time to make a carpet for stately rose tulips, tall blue delphiniums that really play the foil to their companions the Madonna lilies, and endless visions of beauty that flash across the mind's eye of the garden-lover.

The wise gardener lets his fancy play at will with these mind pictures. At the same time he makes a careful study of these marvels of the catalogue, noting the color, height and season of their bloom.

The wide border of five to ten feet, preferably with an irregular outline of deep curves and inundations, makes the best setting for effects of color and shape. *The tall exclamation of a clump of hollyhocks* in rose or maroon gives life and character to perhaps an otherwise flat and uninteresting perspective. Delphiniums, lilies and the "Italica Dropmore Anchusa" may be used for the same purpose. These are perennials *whose blue or white always offset the gold or rose* of other flowers. Shades of lavender, if carefully placed, may be used effectively. But rarely, if ever, place red in a mixed border. It is too dominant and strikes a jarring note. White is truly the color of peace, bringing into harmony those that war together.

As the catalogues carefully explain, there are annual, biennial and perennial flowers. Annuals grow from seed, bloom and die in one season. Biennials take two seasons to reach maturity, blooming and dying in the second year. Perennials, blooming the second season, last for many years. The really enthusiastic gardener uses all these to obtain the desired results.

The perennials, as a class, chiefly bloom in either the spring or fall. The annuals offer a wealth of mid-summer blooms and such old favorites as Canterbury bells (or campanula), forget-me-nots, hollyhocks and foxgloves, though many of these sow from fallen seed, are listed among the biennial class.

The garden should be well dug and enriched in the early fall, "thoroughness" being the worker's motto. The bulbs for spring blooming should be planted preferably in September or October, though success has been had planting a late shipment just before the ground became frozen. The important thing is to cover them well to prevent alternate freezing and thawing. In any case the bulbs are placed in clumps of one dozen or more. A spring garden of Darwin tulips in shades of purple, lavender and bronze, gaily offset by golden daffodils and the new butterfly-like hybrid columbines, dancing on their slender stems, with perhaps some dainty iris against a background of Persian lilacs, is a picture never to be forgotten.

February is the month to make selections and the latter part of March the time to plant in flats or boxes about two inches in depth. Finnan haddie boxes are excellent for this purpose. The advantage of planting the seed at this time in the house is chiefly that the greater number of healthy plants are to be obtained for a small expenditure. Of course, light, sunny windows are necessary, but the germination of the seeds, if the soil used is fine, firmly packed and kept moist, will surprise anyone who has not tried this method before.

When the plants have gained their second pair of leaves, they should be transplanted to two inches apart and, unless their growth is extraordinary or the season very backward, they will not require a second transplanting before they are put in the open ground.

An excellent idea when selecting seeds is to draw a rough sketch of the garden.

This will prove a great assistance when the out-door planting time comes, as the tiny plantlets' appearance is deceiving and, unless the garden guide is carefully followed, the tall, intermediate and dwarf plants, all looking so much alike in their early stages, are apt to become hopelessly confused.

A small spoon makes an excellent dibbler for transplanting. Remove the tiny plant with a compact bit of moist soil about its roots. With one downward stroke and side pressure the hole is made for its reception. A side pressure in the opposite direction about one inch from the plant completes the operation. The most important point when transplanting is to firmly set the plant with soil tightly pressed about the roots. When the little plant has become at home in its new surroundings the next thing to do is to cultivate. Cultivation provides food, air and water—thus producing the largest blooms. All withered flowers should be removed from the plants, using scissors instead of breaking with the fingers.

A selection of easily cultivated flowers would embrace the well-known asters; "Giant Comet" and "Semple's Branching" varieties in shell pink or lavender being perhaps the best for a mixed border. Annual larkspur in delicate lavender and white is excellent in effect and lasts well when cut. Snapdragon or an antirrhinum is one of the most satisfactory plants in a sunny spot. Centaurea Imperialis is graceful and ideal for cutting. Annual gypsophilia is a misty beauty. Scabiosa and salpiglosis are two plants not commonly grown but well worth while, and the old homely cornflower looks well combined with poppies or, to soften the commanding perennials, rose lupines. In various shades of gold the following are good and, at the same time, free bloomers: Calendula, calliopsis, French and African marigolds and the perennial coreopsis.

An interesting experiment may be made growing dahlias from seed, if

The writer's pretty home at Pickering, where flowers make living so much brighter.

THIS WASHER MUST PAY FOR ITSELF

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said: "All right, but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub features.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to buy the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washer-woman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Please state whether you prefer a washer to operate by hand, engine, water or electric motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Better address me personally. C. D. Morris, "1900" Washer Company, 357 Yonge Street, TORONTO.

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ground is available, apart from the mixed border. Sweet-peas and nasturtiums too are best out of the border.

The commercial value of a small flower garden is seldom realized and but a slight difference in the method of handling is required. Four things are important,—proximity to market with a good train service or the possibility of delivering the flowers directly to the buyer. Suitable varieties are necessary and the prospective grower would do well to learn what varieties are most popular in his particular market. The flowers of delicate coloring seem to have the best sale. Never use packages of mixed seed.

The method of growing is similar to that of decorative gardening but planting in straight rows makes cultivation and cutting easier and saves time. Any one of the wheel hoes now on the market will prove of inestimable value.

Another point to be considered is a continuous season of bloom, as contracts may be made to supply the trade throughout the season.

For an early start daffodils and Darwin tulips are excellent. These must be planted in the fall as previously explained. On the Toronto market the price ranges from one to three dollars per hundred blooms according to the quality and season. Calendula (Meteor) is among the first of the summer flowers and makes a good sale, but the hot weather forces it to seed. Snapdragons follow soon after and may be sold from one to three dollars per hundred stalks. They are one of the best. Sweet peas are perhaps one of the most profitable of the summer blooms, selling from seventy-five cents to one dollar-and-a-half per hundred stalks. They produce very prolifically but require a great deal of labor. The summer heat forces them into bloom rapidly and the stems shorten. When they become second class turn the attention to annual larkspur, African marigolds and late asters which will be coming on. These will sell from one to three dollars per hundred. Dahlias and gladioli sell well but require more outlay at the start to purchase the corms and tubers.

Never attempt to sell anything but the best blooms. Cut these when they are not full blown and leave in tubs of water for several hours, or over night, before packing. Pack securely and neatly, using wax paper and cardboard cartons. Don't leave a space between the flowers and the top of the box.

Attend to details and growing flowers for profit proves a pleasure.

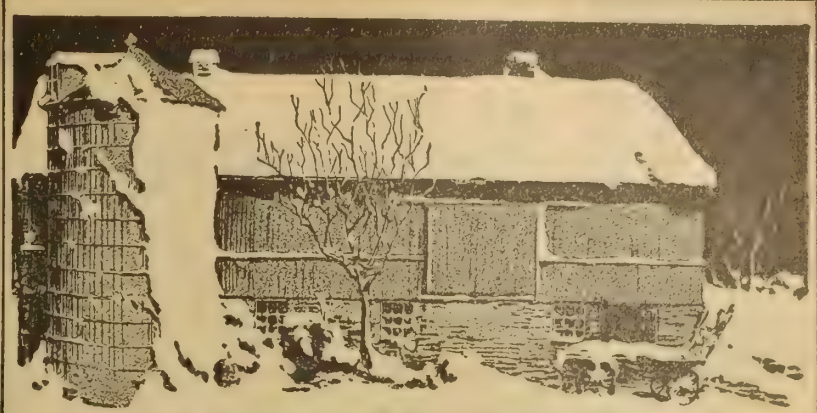
FREE TRACTORS STILL

By T. M. F.

IT may be indicative of the way the wind is blowing that the Government has extended the order "until further notice" admitting gasoline tractors costing less than $1,400 free of duty, and has also granted a drawback of 99 per cent. of duty paid on raw materials used in the manufacture of gas or gasoline tractors and repairs therefor since February 7th, 1918, the date when small tractors were first admitted free of duty. This is a recognition of the principle urged by many manufacturers, and agreed to by the advocates of free implements, that removal of the duty on raw materials shall go side by side with the removal of the duty on the implements themselves.

It was generally felt that the order made a year ago would be extended. To do otherwise would have precipitated a crisis which the Government is not anxious for. There must be some sort of a sop for the Western Cerberus who is hot on the trail of the protective tariff; and there is no more embarrassing question before the Government now than how it is to meet the demands which it is expected will arise as soon as the House meets.

There are three sources of possible relief for the Government; it might drop the 7½c war tax; it might grant the West its most insistent demand—for free implements; or it might appoint a tariff commission to go into the whole question.



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NOW is the time when you need an Ideal Green Feed Silo. These cold, wintry days when your milk flow shrinks if your cows are on a dry feed ration make you wish that you had installed an Ideal Green Feed Silo last year.

Authorities agree that cows will give 25% more milk on a silage ration than on dry feed with grain, and a silage ration is much cheaper than a dry ration.

Plan for your Silo NOW

Before you know it the rush of spring and summer work will be on you again, and if you let the matter drag along you will probably come around to another winter and still not have a silo.

An Ideal Green Feed Silo will preserve your silage better than any other silo made, and will last longer. Thousands of Canadian cow owners have proved this to their own satisfaction.

Write today for our large illustrated catalogue, which shows every detail of this silo and gives much valuable and interesting information about silos and silage.

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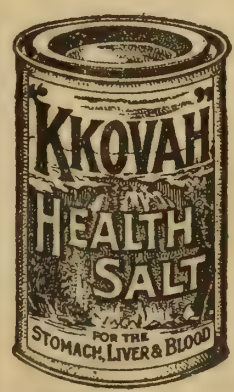

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Sutcliffe & Bingham, Ltd., Manchester, England

N.B. Send a tin to your boy at the front or at sea. It will keep him fit.

STEVENS' BLOOD, BONE AND POTASH FERTILIZER

A COMPLETE FERTILIZER

Analysis:-2 Ammonia, 6 Phoc. 2 Acid, Potash, 30 Lime

Write for price delivered to your station

George Stevens, 364 Mark St., Peterborough, Ont.

Economy

The difference in cost between an ordinary baking powder and the pure, strong, ***double-acting***

EGG-O Baking Powder

is trivial. It amounts to only a fraction of a cent on each cake you bake. Against this you risk your high-priced flour, butter, sugar, eggs and milk, and your reputation as a cook.

Spoiled bakings not only cost you money, but they waste food. With the heavy Government Standard flours in use to-day, the selection of a strong baking powder is absolutely necessary.

The double-acting strength of Egg-O is needed to make a baking of a light cake from a heavy flour. Try a can and watch your bakings improve. You can use sweet milk, sour milk, buttermilk or water with Egg-O —a different and better baking powder.

Egg-O Baking Powder Co., Limited
Hamilton, Canada

22

Take Your Time

NEVER buy a cream separator in a hurry. Your reason for buying is not so much to get a cream separator, as to get all the cream from your milk, all the time. It takes time to pick that kind of a machine out of the many on the market.

Send to reputable firms for catalogues, and study them carefully. See which machine requires the fewest and simplest adjustments; which has the best oiling system; which is most sanitary and most easily cleaned which is so well made that it will undoubtedly do good work for a long time. Go into details, and pick the best two or three of the lot.

Then ask for skimming demonstrations to determine how little cream is left in the skim milk. This is important, because the wrong machine can waste more cream than it is worth, while the right one will put money in your pocket every time you use it.

When you are through you will find that you have bought a **Lily Cream Separator** because the **Lily** will prove to be first on all these counts. We will send catalogues on request, leaving the final decision to your judgment. Write to the nearest branch house.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

Seasonable Recipes

Salmon Custard

2 cups scalded milk
2 eggs
1 teaspoon salt
1 small can salmon

Beat the eggs slightly, add the milk and stir in the salmon and seasoning. Pour into a buttered baking dish and set the dish in a pan of hot water in a slow oven. The reason for surrounding the dish with water is to protect it from extreme heat, which makes a custard tough and curdled.

Scalloped Corn and Beans

Make a white sauce, using:

2 tablespoons butter
2 tablespoons flour (level)
½ teaspoon salt
Pepper
1 cup milk

Melt the butter in a saucepan over the fire, and while it is frothing stir in the flour. Gradually add the milk, stirring constantly until it thickens. Butter a baking dish. Fill with alternate layers of cooked lima beans and canned corn, well-seasoned. Pour over the white sauce and bake in the oven until well-heated through and slightly browned on top.

Scalloped Beans and Tomatoes

Stew canned or ripe tomatoes with a few slices of onion and season well with salt, pepper and a little sugar, if desired. Combine this with cooked white or Lima beans, turn into a buttered baking dish, cover with buttered crumbs and bake in the oven until heated through and the crumbs are well browned.

Macaroni and Cheese, (not baked)

Break one-half cup macaroni into inch pieces and cook in boiling salted water for twenty minutes or until soft. Drain in a strainer and rinse with cold water to prevent the pieces sticking together. Make a white sauce as described in the recipe for scalloped corn and beans and just as this is removed from the fire add one cup grated cheese. Turn the boiled macaroni into a hot vegetable dish, pour over the sauce and serve.

Macaroni and Beet Salad

Boil in salted water one-quarter cup macaroni broken in half-inch pieces. Add this to about two cups chopped cooked beets. Mix lightly with a fork gradually, adding a boiled salad dressing. When celery is in season add a few stalks chopped fine.

Crisp Oatmeal Cookies

4 cups rolled oats
2 cupfuls sugar
1 cupful shortening
1 cupful milk
1 teaspoonful soda
About 4 cupfuls pastry flour
½ teaspoonful salt
½ teaspoonful nutmeg
½ teaspoonful vanilla

Put the dry oats in a mixing bowl, add sugar and shortening, and cream well. Add milk gradually and continue beating until creamy. Sift the soda, nutmeg, and salt with the flour to make a stiff dough. Add the vanilla. Roll thin and bake in a moderate oven on greased cooky pans or sheets. This recipe makes about one hundred cookies, according to the size of cutter used.

Graham Wafers

1 cup brown sugar
½ cup butter or lard and butter
5 tablespoons sweet milk
½ teaspoon soda
A pinch of salt
2 handfuls bran
Enough Graham flour to make a dough soft enough to roll thin.

Cream butter and sugar together. Dissolve soda in the milk. Mix all the ingredients together, roll very thin and cut in oblong cookies before baking.

Maple Candy

1 lb. maple sugar
1 cup shelled nuts
2 cups rich milk
1 tablespoon vanilla

Put the sugar on to cook with the milk, and cook until the mixture dropped into cold water will form a soft ball. Beat until it begins to turn creamy, stir in the flavoring and the nuts and pour into a greased pan to harden.

THE WORLD FAMOUS
CECILIAN
PLAYER PIANO

THE Cecilian has been the world's leading player for the past 35 years--and still stands supreme.

Perfect in Tone---Ease of Operation---Complete Control---Beautiful in Design.

IT IS NOT AN EXPENSIVE MATTER TO PURCHASE A CECILIAN PLAYER---PRICES MODERATE.

Write for terms and catalogue

The
Cecilian Co., Ltd.
247 Yonge St., Toronto

CONNOR WASHING MACHINE

The Connor "Ball Bearing" Washing Machine runs: Oh! so easy—and so thoroughly. It will not injure the most delicate fabrics and will pay for itself in the saving of clothes alone over the old fashioned ruinous way of the wash board and tub and besides it's so easy to operate and so quick. Write for beautifully illustrated booklet which tells how easy Washday can be made.

J. H. Connor & Son, Ltd.
OTTAWA - ONTARIO

Get Longer, Better Wool

Shear with a machine and leave no second cuts nor scar the sheep. Use a Stewart No. 9 Ball Bearing Shearing Machine. Gets 15% more wool easily and quickly. Removes the fibre completely, making it longer and better selling. Leaves a smooth, even stubble for next year's growth. Machine soon pays for itself. If dealer can't supply you send us his name. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B165, 12th St. & Central Ave., Chicago, Ill.

Preventable Ill-Health

By DR. MARGARET PATTERSON

From an address at the Ontario Women's Institute Convention

"TALK *Health. The dreary, never-changing tale of mortal maladies is worn and stale. You cannot charm or interest or please by harping on that minor chord—Disease.*"

Too long we have harped on this chord and it has taken a war with its tremendous loss of life to teach us the value of human life, or to cause us to realize how careless and wasteful of life we as a nation are. When the figures were given out that the deaths due to the war in 1915 reached 1,000,000 we were appalled, but during that same time more than a million people died of tuberculosis. Who can say but that the sufferings from tuberculosis were infinitely more than of those killed on the battle field?

At its worst, the war is a temporary thing, but tuberculosis will go on and on until we awake from our indifference and realize our responsibility and do our bit to wipe out this foe of mankind. We have realized that war is unnecessary. We know that most of the infectious diseases from which we suffer are unnecessary. Then, why not determine that they too shall cease? As the men in France said of the Germans, "They shall not pass," so we women of Ontario must say of these diseases, "They shall not continue," and this is our work. The health of the nation is in the hands of its women. We must either do our bit or shirk. We do not belong to a race that shirks, so we must plan our campaign. We must locate the foes that are every year killing thousands of our Canadian born babies and depriving us all of an average fifteen years of life. We must find out where they live—their source of supply—and then cut them off. To do this, we must have education—along the natural laws governing health, and the consequences of breaking these laws. We must have general education along health lines. "Know the truth and the truth will make you free."

It is estimated that the economic loss alone in the United States each year from unnecessary and preventable diseases is over a billion dollars. Our percentage in Canada is quite as high, but we have not yet thought enough of the value of human life to keep statistics regarding it. Medical men say that *if the present knowledge of hygiene and sanitation were applied in daily life, at least fifteen years would be added to the present average length of life.* Surely, there is something wrong when one-third of all persons born die before they are twenty-five years old. Surely, we are an extravagant people and in nothing are we more wasteful than in human life and health. We have been taught to conserve food and we must continue to do so, for millions are still hungry, but our conservation has not gone far enough. We have stopped short of the best, but now the time is ripe for action.

Among the good things which the war will bring us as permanent to our national good, I think we may expect at least the following—an estimate of the value of the individual citizen, a better appreciation of the necessity for personal physical preparedness for the activities of peace, and good citizenship; better care of the health of the average citizen by the Government and the providing of courses of instruction in hygiene and health matters in all our educational institutions and to citizens generally; universal physical training for both boys and girls, more attention given to wholesome recreation, and provision made for sufficient play for both old and young to keep them normal; universal health inspection; the suppression of vice diseases, and a nation-wide campaign against all unnecessary diseases. If the war accomplishes this, the result will be the saving in a single decade of more lives than have been lost upon the battlefield, and our boys will not have died in vain.

When we talk of our great wealth in our natural resources, do not let us forget the value of sunshine and fresh air. That is our greatest source of true wealth—Health. But we must learn how to use them. This is a day when efficiency is demanded. Let us learn to live efficiently—to eat properly—breathe properly, and obey God's laws of life. It is necessary that we should know how to care for the sick and for those who have met with an accident, but prevention is always better than cure, and while we are going to learn all we can about the care of the sick, we must spend some time in the study of health.

SAFETY FIRST RULES OF HEALTH

IN her First Aid and Home-Nursing lectures, Dr. Patterson gives the following safety first rules of health:

Keep the hands clean. Put nothing in the mouth except food. Keep the teeth clean and free from decay. Keep away from a person having a disease of a communicable nature. Beware of anyone who has a sore throat. Court cleanliness in all things. Breathe pure air. Dwell in the light—windows are of little use if the blinds are always drawn. Do everything you can to build up a strong body and vigorous health. This will aid you most of all to withstand germs that cause disease. Take stock of your health. Get looked over by a doctor. Audit your physical accounts at least once a year, and thus prevent the development of any disease that may be lurking in your system.

A CHAT ABOUT ROSES

By Laddie

IT is not too soon to begin planning a flower garden for 1919.

Indeed the early spring months are as full of interest as the summer months for those persons who have imagination.

To draw up a plan, to decide what to sow and plant, to consult seed catalogues, to get ready the necessary tools, are all as thrilling and profitable as the actual operations in the garden. From all appearances, the amateur gardener will have to be wary of April this year; it is sure to be cool, windy and backward. Rose and strawberry growers, especially, will be wise to keep the winter coverings on till the end of the month and take them off gradually. Roses will come through the winter in fine style, and in April or May succumb to cold winds. I lost one-third of my roses in May, 1907, in this way.

Last spring, I decided to plant a new bed of Hybrid Teas. I gave them a place to themselves, airy, sunny and protected from the North. They are Pharasaer, General McArthur, Lady Alice Stanley, Madame Leon Pain, Red Letter Day, C. J. Graham, two Richmond, two Killarney, W. R. Smith and Hermosa.

Would you believe that they bloomed constantly till Nov. 28, and even then were covered with buds? People said: "Why, we thought those beautiful roses could only be grown in a greenhouse! What was the result? Nine of my neighbors are planting roses this spring. Let my readers try some this year for themselves. Get two-year-old plants to begin with. The roses I have mentioned will give a family roses during the whole season, and the most of them will bloom all winter if transferred to the house. This spring I am adding two dozen more to my collection.

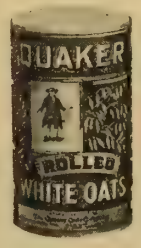
Preparedness is half the battle in seeding.

Is the grain drill in order?
Disk sharp and in repair?
Spare doubletrees ready?
Formaldehyde on hand?
Plow lays all forged?
Harness mended and oiled?
Harrow teeth sharp?
Seed grain tested?
Summer wood ready?
Plenty of machine oil?
Seed cleaned?
Teams fit?
Spare clevices?
Boss cheerful?
Giddap!

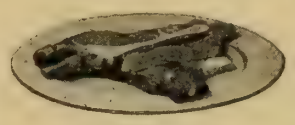
Pay Her $3

For Each Empty Package

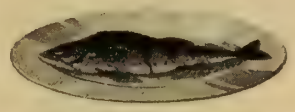
A Suggestion to Men



5½ Cents
Per 1000 Calories



57 Cents
Per 1000 Calories



60 Cents
Per 1000 Calories

54 Cents
Per 1000 Calories

78 Cents
Per 1000 Calories

The 35-cent package of Quaker Oats contains 6,221 calories—the energy measure of food value.

In meat, eggs and fish the average cost of 6,221 calories would be at least $3.50.

So each 35-cent package served in place of meats saves around $3. And the housewife who saves it should have it.

Make each empty package worth $3 in some special household fund. Then watch the fund grow.

This is how some necessary foods compare in cost, at this writing, based on their caloric value:

Cost of 6221 Calories

In Quaker Oats - -	$0.35
In Round Steak - -	2.54
In Veal Cutlets - -	3.53
In Canned Peas - -	3.35
In Codfish - - -	4.85

And Quaker Oats, which costs so little, is the greatest food in the list.

Analysis shows the oat to be almost the ideal food in balance and completeness.

Make Quaker Oats your standard breakfast. That's the best way to bring down food cost.

Quaker Oats

The Oat Dainty

Quaker Oats means extra flavor without extra cost. It is flaked from queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel.

In millions of homes this exquisite flavor has made the oat dish popular.

Two Sizes: 35c and 15c—Except in the Far West

(3067)

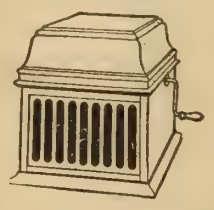
Unbreakable, Everlasting

Owners of the New Edison Diamond Amberola

90c each

do not have to pay big prices for phonographic selections by great artists because Amberol Records give them a wide range at very low cost. The following list are the most popular at present. Remember, we pay express charges to any point in Canada.

1516—Just Before the Battle, Mother—Root—Counter-Tenor—Oakland & Cho.
1524—Silver Bell—Weinrich—Jones & B. Murray.
1547—Silver Threads Among the Gold—Danks—Oakland.
1560—Preacher and the Bear—Arizona Collins.
1583—Uncle Josh Buys an Automobile—Stewart.
1798—Where the River Shannon Flows—Oakland & Cho.
2125—Where is My Wandering Boy To-night—Edison Mixed Quartet.
2556—Little Ford Rambled Right Along—Gay—B. Murray.
2835—There's a Long, Long Trail—Elliott—Ballard & Cho.
3011—Smiles, Them Kisses—Ancliffe—Waikiki Hawaiian Orch.
3153—One, Two, Three, Four Medley—Waikiki Hawaiian Orch.
3237—Oh, Johnny, Oh, Johnny, Oh—Premier Quartet.
3431—Favorite Hymns of Fanny Crosby—No. 1 Valvary Choir.
3436—Break the News to Mother—Ballard & Cho.
3457—Laddie in Khaki—Ellison.



Write for particulars and prices of this wonderful little entertainer, Amberola 30, Everlasting Diamond Point. No needles to change. Express charges paid to anywhere in Canada.

The R. S. Williams & Sons Co., Ltd.

MONTREAL WINNIPEG CALGARY TORONTO

The Time Tried Cultivator

A Vital Point in Seeding

SEED must be deposited in a well-opened, finely pulverized, well-aired soil with plenty of moisture. The young plants and roots must have a well prepared seed-bed, else they cannot stool out and form a strong system. Fail at this vital point and your chances of a good crop are gone. The roots cannot spread out, the crop will be stunted in growth. A

Peter Hamilton Spring Tooth Cultivator

will work your soil into a good seed-bed. It is designed to cut every inch of ground and thoroughly pulverize it to an even depth.

The arrangement of the sections to which the teeth are attached is such that the front and back rows act independently. There is no danger of one set of teeth cultivating deeper than another or vice versa. Furthermore, having so many sections gives the teeth more freedom of action, and when one tooth catches on a stone or root only two or three are jerked out of the ground instead of one half or all of the teeth. The teeth are made from very high grade steel and are reinforced with our patented helpers. The points of teeth are reversible, giving double wear. There is no chance of clogging when the teeth are in three rows.

The frame is strong, well braced and firmly trussed and cannot sag in the middle.

Write us to-day for illustrated booklet and make sure of having a Peter Hamilton Cultivator on hand for preparing a good seed-bed.

THE PETER HAMILTON CO., Limited
PETERBORO, Ontario 48

CHEW KING GEORGE'S NAVY PLUG TOBACCO

And enjoy it's lingering flavor 15 cts.

Partridge Tires

Game as Their Name Wear Down All Road Resistance

Made by The F. E. Partridge Rubber Company, Limited, Guelph, Ont.

65

A GOOD AVERAGE IN ENGLAND

AT a recent competition held under the auspices of the Cheshire County Agricultural Society of England, the Willow herd of British Friesians, owned and developed by Mr. and Mrs. Carter, of Cholmondeston, won first prize in open competition in the class for herds on farms under 100 acres. In the class for the best six cows (with official milk yields) in any one herd, first prize was Friesians. The total production of the six (as given by the Cheshire County Milk Recording Society) for the year 1918 was 66,961 lbs. milk, or an average of 11,160 lbs. per cow. The six Friesians averaged 1,256 quarts per head more than the average of the six dairy Shorthorns which obtained second prize.

CHARITY AND JOHNATHAN

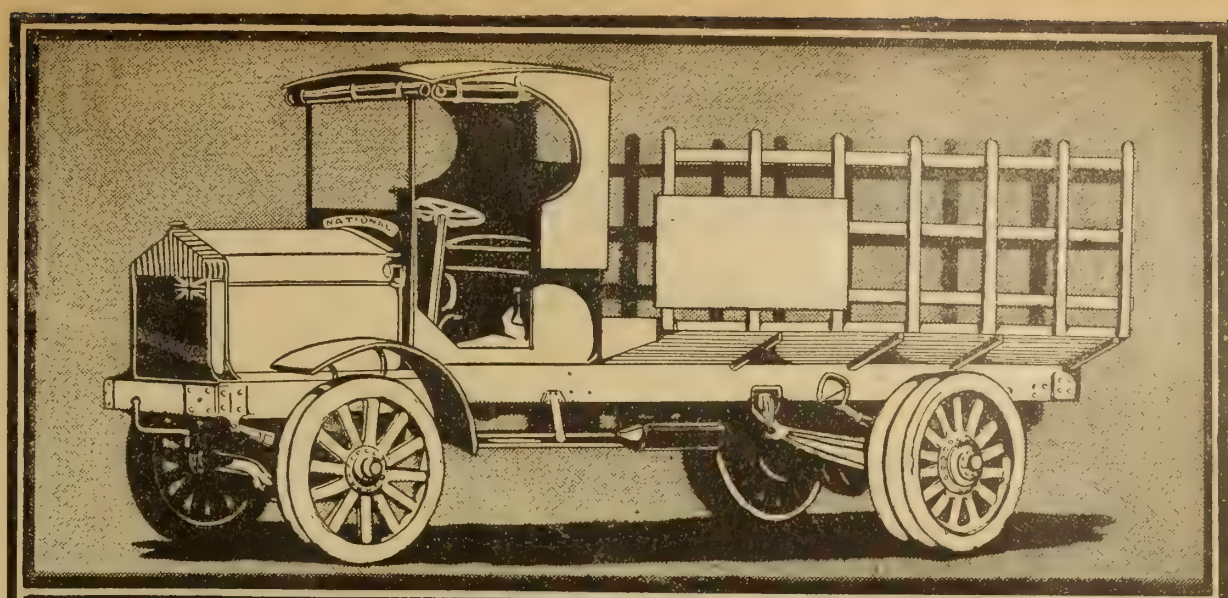
Continued from page 11

country where the real message of music has never been carried?" And it was the beginning of community singing in the district. . . . So the families who leave the farm to follow other callings, come back sometimes to spread a wider influence.

LIFE has not changed since the poet wrote of the bereavement of the flock, however watched and tended. Just when she seemed beginning the years of her greatest influence, when the world was beginning to listen, the girl Charity sickened and died. It would have seemed somehow that Charity couldn't die—all the glow and promise of her young womanhood, the voice that could sway thousands and couldn't be still, were too much alive to stop being. Yet she had left them.

Nothing ever made up to the family the loss of their only daughter and sister, but they weren't always sad about it. The life that had left them singing almost up to the brink would never be changed or saddened or spoiled; the years might go on with their wear and uncertainties, but she would always be young, they could imagine she would always be singing and waiting for them and it opened up another world that had hitherto had no real meaning for them. When the boys married and made homes of their own they had a sympathy, a vision of the immortality of things that even Charity and Jonathan in their ecstatic wanderings with the birds and yellow butterflies had missed. They could not build a house to shut themselves away from the world; they knew how much the sufferings of the world had need of them. . . . There are many experiences through which it has been good to be one of a family.

And the years went on and Jonathan and Charity were getting old. Fifty years from the day when they came from the church and built a fire on the hearth of the little house at the turn in the road their sons and their sons' wives came and decorated the house with apple-blossoms and made a golden wedding. There were grandchildren ranging all the way from young men and women to babies who, the grandparents declared, were just like their own had been, and the family album was brought out and young Jonathan's and James' and Arthur's baby pictures produced to verify the likeness. And little Charity in her christening dress—they looked at that picture longer than the others. The circle hadn't been complete since she left them, and yet seeing the years dwindling ahead of them, and still clinging to the instinctive parental anxiety for their children even though they were men and women with families of their own, they said, "At least one is safe." Still they were very happy. Their years were lessening, but they had not run away from life, they had known its heights and its depths and it had given them a great deal. And when they went out here were other brave and gifted young Charitys and Jonathans to carry on the ideals and traditions they had cherished and kept alive. . . And the thing the world needs most is brave and gifted young lives with a right inheritance of ideals and traditions.



Built in Canada
For Canadian Conditions.

Day by day National Motor Trucks are wiping out old notions of what motor truck service ought to be—establishing new records of efficiency, reliability, and economy.

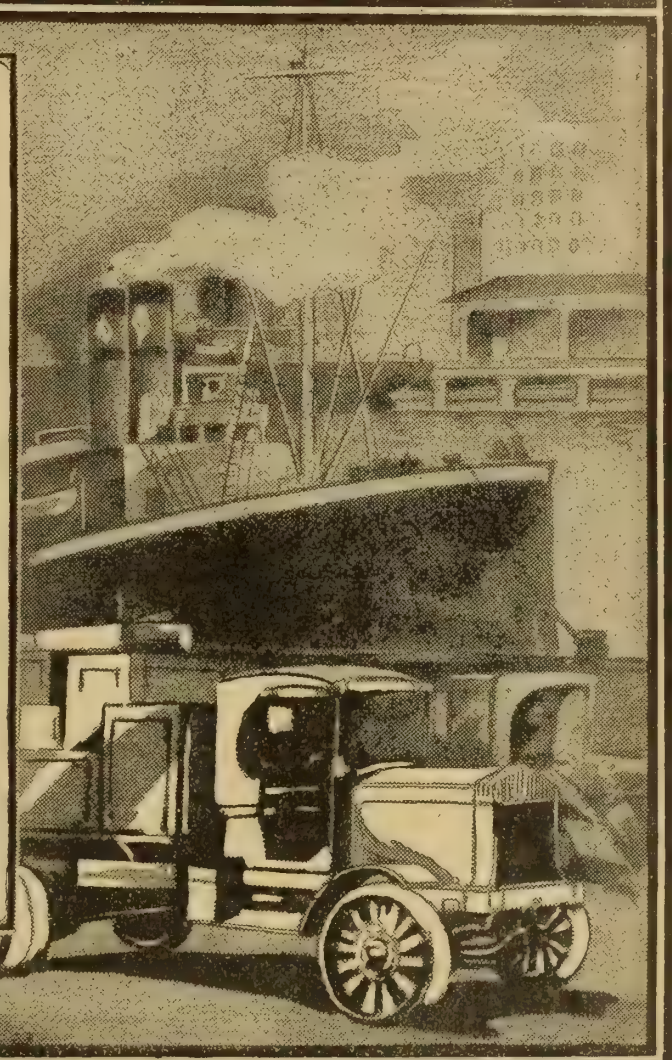
And here's the reason. National Motor Trucks in their entirety are the product of specialists. Each part, in turn, is built by a specialist. The National engineers have drawn upon the best "motor truck brains" of the entire world. Combining standard features with the scientifically correct National designs produces a maximum of motor truck value which, we believe, has never been equalled. Put National side by side any other truck—and choose. That's our challenge to you!

Familiarize yourself with the standard of value by which you can make comparisons. You can't afford to buy on hearsay, guesswork, or sentiment. National facts and figures are convincing. Ask for them.

Five Models—1 ton, 2 ton, 3½ ton, 5 ton trucks and 6 ton tractor.

NATIONAL STEEL CAR CO., LIMITED.
HAMILTON -- CANADA

Write for illustrated catalogue and name of the nearest National dealer



NATIONAL
MOTOR TRUCKS

SALES AND WANTS

THE FARMER'S EXCHANGE SEMI-MONTHLY

5 cents a word---per insertion

AGENTS—MASON SOLD 18 SPRAYERS AND Autowashers one Saturday; profits $2.50 each; square deal; particulars free. Rusler Company, Johnstown, Ohio. (Apr. 15-19)

CYPHERS WYCKOFF BRED TO LAY S.C. White Leghorns, Cockerels, Baby Chicks, Hatching Eggs. Catalogue. Cooksville Poultry Farm, Cooksville, Ont. (Mar. 15)

SEED CORN

SALZER DAKOTA. WHITE FLINT. HIGH germination. Satisfaction guaranteed. $3.50 per bushel. Write for 10-bushel rates. W. Edwin Troup, RR 1, Jordan Sta., Ont.

HELP WANTED

$20 A MONTH FOR GIRL TO ASSIST IN housework in Toronto home. This is an excellent opportunity for girl seeking a genuine home. Apply Box 26, Farmers' Magazine, 143-153 University Ave., Toronto.

A THOROUGHLY RESPECTABLE GIRL, around 17, seeking a nice home in Toronto, can secure a position with young couple. Light house work. Good wages will be paid to the right girl, who can be relied upon. A farmer's daughter would probably suit this position. Apply to Mrs. Muir, 202 Delaware Avenue, Toronto. 'Phone College 896.

We send you a genuine Gophir Gem mounted in 14kt solid gold so you can wear it for five full days. Gophir Gems have the eternal fire of diamonds. They are cut like diamonds, stand all diamond tests, and are guaranteed for a lifetime.

Don't send us a penny. Simply forward your name and address for our beautiful catalog of Gophir Gem jewelery. Select from it the goods desired. After wearing five days, if you want to keep them, pay on instalments as low as $1 a month. No red tape; your credit is good.

Gophir Gems are the master products of science—the realization of the dreams of centuries. Send to-day. Wear it before you decide to buy.

Gophir Diamond Co. Limited, Dept L 140 Yonge St. Toronto

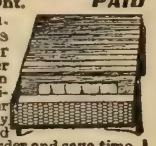
"ARE COLLINS INCUBATORS RELIABLE?"

Oba, Ont., Feb. 7, 1919.
I used one of your machines last year and had good success as I had never used one before. They keep the heat well, considering that the temperature drops to 56 degrees below here at times. E. V. LEWIS.
Satisfied customers prove the worth of our Incubators and Hovers, and they cost so little. A postcard brings our catalogue, which will convince you. Don't delay—write to-day.
THE COLLINS MANUFACTURING COMPANY,
413 Symington Ave., Toronto, Ont.

130-Egg Incubator and Brooder Both For $17.50

If ordered together we send both machines for only $17.50 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Ten year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of $17.50 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time.

FREIGHT AND DUTY PAID



Write us today. Don't delay. WISCONSIN INCUBATOR CO., Box 204 Racine, Wis., U. S. A.

Abolish the Truss Forever

Do Away With Steel and Rubber Bands That Chafe and Pinch

You know by your own experience the truss is a mere makeshift—a false prop against a collapsing wall—and that it is undermining your health. Why, then, continue to wear it?

Stuart's PLAPAO-PADS are different from the truss, being medicine applicators made self-adhesive purposely to prevent slipping and to hold the distended muscles securely in place. No straps, buckles or springs attached; no "digging in" or grinding pressure. Soft as Velvet—Flexible—Easy to Apply—Inexpensive. Continuous day and night treatment at home. No delay from work. Hundreds of people have gone before an officer qualified to acknowledge oaths, and swore that the Plapao-Pads cured their rupture—some of them most aggravated cases of long standing. It is reasonable that they should do the same for you. Give them a chance.

FREE TO THE RUPTURED

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

THE story opens at Bostil's Ford, in the wild country of the Colorado River. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. Lucy is a wonderful rider and the idol of her father's ranchmen.

Lin Slone, a daring wild-horse hunter, sets out from the uplands of Utah, five hundred miles from Bostil's Ford, and takes the trail of a magnificent wild stallion, which he names Wildfire. He travels on for about three months, reaching the Grand Canon of the Colorado, where he descends into the desert. Supplies have given out and he is almost starving. At last Wildfire goes down a narrow pass into a deep basin of land where there is no other means of exit. Slone rides down at night and fires the grass behind Wildfire; then he returns to the pass, knowing that the fire will chase the horse out within reach of his lasso. The fire slowly spreads, and towards dawn Wildfire appears in sight.

Slone uttered an involuntary cry. Thrill on thrill shot through him. Delight and hope and fear and despair claimed him in swift, successive flashes. And then again the ruling passion of a rider held him—the sheer glory of a grand and unattainable horse. For Slone gave up Wildfire in that splendid moment. How had he ever dared to believe he could capture that wild stallion? Slone looked and looked, filling his mind, regretting nothing, sure that the moment was reward for all he had endured.

The weird lights magnified Wildfire and showed him clearly. He seemed gigantic. He shone black against the fire. His head was high, his mane flying. Behind him the fire flared and the valley-wide column of smoke rolled majestically upward, and the great monuments seemed to retreat darkly and mysteriously as the flames advanced beyond them. It was a beautiful, unearthly spectacle, with its silence the strangest feature.

But suddenly Wildfire broke that silence with a whistle which to Slone's overstrained faculties seemed a blast as piercing as the splitting sound of lightning. And with the whistle Wildfire plunged up toward the pass.

Slone yelled at the top of his lungs and fired his gun before he could terrorize the stallion and drive him back down the slope. Soon Wildfire became again a running black object, and then he disappeared.

The great line of fire had gotten beyond the monuments and now stretched unbroken across the valley from wall to slope. Wildfire could never pierce that line of flames. And now Slone saw, in the paling sky to the east, that dawn was at hand.

CHAPTER VII

SLONE looked grimly glad when simultaneously with the first red flash of sunrise a breeze fanned his cheek. All that was needed now was a west wind. And here came the assurance of it.

The valley appeared hazy and smoky, with slow, rolling clouds low down where the line of fire moved. The coming of daylight paled the blaze of the grass, though here and there Slone caught flickering glimpses of dull red flame. The wild stallion kept to the centre of the valley, restlessly facing this way and that, but never toward the smoke. Slone made sure that Wildfire gradually gave ground as the line of smoke slowly worked toward him.

Every moment the breeze freshened, grew steadier and stronger, until Slone saw that it began to clear the valley of the low-hanging smoke. There came a time when once more the blazing line extended across from slope to slope.

Wildfire was cornered, trapped. Many times Slone nervously uncoiled and recoiled his lasso. Presently the great chance of his life would come—the hardest and most important throw he would ever have with a rope. He did not miss often, but then he missed sometimes, and here he must be swift and sure. It annoyed him that his hands perspired and trembled and that something weighty seemed to obstruct his breathing. He muttered that he was pretty much worn out, not in the best of condition for a hard fight with a wild horse. Still he would capture Wildfire; his mind was unalterably set there. He anticipated that the stallion would make a final and desperate rush past him; and he had his plan of action all outlined. What worried him was the possibility of Wildfire doing some unforeseen feat at the very last. Slone was prepared for hours of strained watching, and then a desperate effort, and then a shock that might kill Wildfire and cripple Nagger, or a long race and fight.

But he soon discovered that he was wrong about the long watch and wait. The wind had grown strong and was driving the fire swiftly. The flames, fanned by the breeze, leaped to a formidable barrier. In less than an hour, though the time seemed only a few moments to the excited Slone, Wildfire had been driven down toward the narrowing neck of the valley, and he had begun to run, to and fro, back and forth. Any moment, then, Slone expected him to grow terrorized and to come tearing up toward the pass.

Wildfire showed evidence of terror, but he did not attempt to make the pass. Instead he went at the righthand slope of the valley and began to climb. The slope was steep and soft, yet the stallion climbed up and up. The dust flew in clouds; the gravel rolled down, and the sand followed in long streams. Wildfire showed his keenness by zigzagging up the slope.

"Go ahead, you red devil!" yelled Slone. He was much elated. In that soft bank Wildfire would tire out while not hurting himself.

Slone watched the stallion in admiration and pity and exultation. Wildfire did not make much headway, for he slipped back almost as much as he gained. He attempted one place after another where he failed. There was a bank of clay, some few feet high, and he could not round it at either end or surmount it in the middle. Finally he literally pawed and cut a path, much as if he were digging in the sand for water. When he got over that he was not much better off. The slope above was endless and grew steeper, more difficult toward the top. Slone knew absolutely that no horse could climb over it. He grew apprehensive, however, for Wildfire might stick up there on the slope until the line of fire passed. The horse apparently shunned any near proximity to the fire, and performed prodigious efforts to escape.

"He'll be ridin' an avalanche pretty soon," muttered Slone.

Long sheets of sand and gravel slid down to spill thinly over the low bank. Wildfire, now sinking to his knees, worked steadily upward till he had reached a point halfway up the slope, at the head of a long, yellow bank of treacherous-looking sand. Here he was halted by a low bulge, which he might have surmounted had his feet been free. But he stood deep in the sand. For the first time he looked down at the sweeping fire, and then at Slone.

Suddenly the bank of sand began to

Continued on page 26

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POULTRY

WHY NEGLECT POULTRY?

By George McDonald

ALL breeds of hens can be found to pay their way well, if a little care is given them in breeding as well as feeding.

I have kept White Leghorns for a number of years, raised a few pullets each year and culled out a few that I felt sure were not fed at a profit.

We never looked for eggs in December, and if we got a few in January we began to smile, In February and March we would get probably 20 eggs a day from 80 hens, and I can say here that not one in ten of our brother farmers was doing any better, but I was not satisfied.

I felt that something was wrong, so three years ago I kept tab on my early winter layers. I watched the hens carefully for weeks and finally I picked out 10 of the best I had. I then secured from the O.A.C. a good cock to mate with these.

The next year I repeated the selecting process and now I have as fine a type of 70 pullets as are to be found around here. They began to lay in December, giving 25 eggs a day. In January they averaged over 26 eggs per day.

Regarding feeding, I feed plain food that any farm has on hand. I feed oats and barley in equal parts in the morning, in deep litter, and wheat and barley at night in litter. A dry mash of equal parts of middlings, bran and barley chop is always open in the hopper. I give an occasional mash of potatoes or turnips, with raw turnips or cabbage at all times. I always keep plenty of clean water and feed all the buttermilk and table scraps to spare. They have oyster shell and grit at all times. I do not believe in all the fads of feeding I see in print, such as beef scrap, green cut bone, alfalfa, clover and all the rest of it.

I have a cotton window, two feet square, in east and west, also one 4 x 3 in south on hinges, with a window in the south open all day and at 30 below zero my hens have not frozen yet.

Your handling of hens is all that can be desired. This is the exact system that our college men recommend. Certainly you do not need to believe in buying fads, such as beef scrap, as you say, for your table scraps and buttermilk cover this. But suppose you had no milk or table scraps, what would you do? You are certainly on the right track for money in poultry.—Editor.

ARE THERE DUAL-PURPOSE COWS?

By Grover C. Anderson

I NOTICED an article in your January 15th issue on Beef Breeds by Shepherd. He says the late John Bright says there is no such thing as beef and milk combined in one cow. No doubt they are not very plentiful, but there is good, fair beef with a good, fair production of milk. I think for the average farmer of Ontario who does mixed farming they are the ideal cows.

No farmer can afford to let his calves nurse from their mothers, and sell the stock at two and three years old on the open market for beef. A fair cow, with decent feeding, should be a paying cow if she produces enough to amount to $125 in one lactation.

Now one can raise a calf on skim milk and get at two years old $125 for it, so that the dual purpose cow is all right for the average farmer of Ontario. Too many people take a shot at the good Shorthorn cows that made old Ontario prosperous years ago.

POULTRY BOOK Latest and best yet; 144 pages, 215 beautiful pictures and color plates Hatching, rearing, feeding and disease information; describes the busy Poultry Farm handling 58 varieties including Indian Runners. Tells how to properly choose fowls, eggs, incubators, cheap feed and PURE-BRED BABY CHICKS. This practical book worth dollars mailed for 10 cents.
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YOU want eggs to sell at these war-time prices, and you want to do your full part toward increasing the world's food supply.

Speed up the laying. Get your hens in finest laying trim by feeding Dr. Hess Poultry Pan-a-ce-a. It helps to make poultry healthy—to make hens lay—to make chicks grow.

DR. HESS POULTRY PAN-A-CE-A

Mating time is here. Now's the time to put your hens and roosters in the pink of condition. If you want chicks that will live and develop rapidly, if you want early broilers, if you want pullets that will develop into early winter layers, then feed the parent stock Dr. Hess Poultry Pan-a-ce-a.

Remember, its the singing, scratching, industrious hen that lays the healthy, fertile eggs that will hatch into strong, livable chicks. Feed Pan-a-ce-a for results. Buy according to the size of your flock—a penny's worth for every hen to start with. A good rule for feeding is a tablespoonful once a day for every 20 to 25 hens.

The dealer from whom you buy Pan-a-ce-a will return every cent you pay him if it does not do what is claimed. 35c, 85c, and $1.75 packages. 25-lb. pail, $3.50; 100-lb. drum, $14.00.

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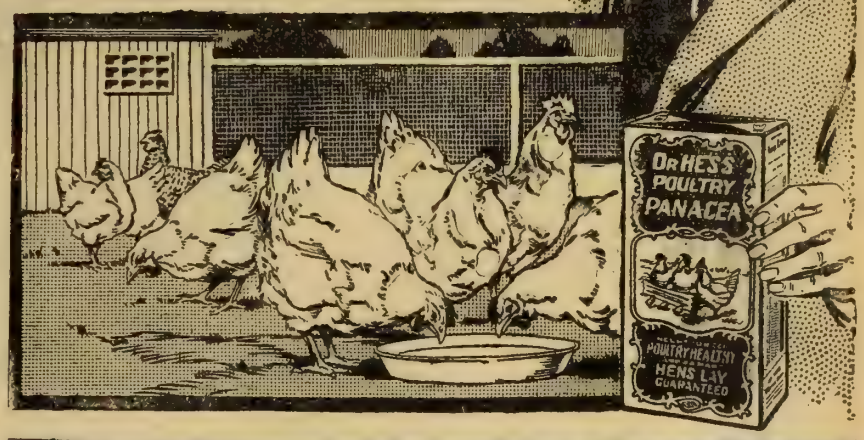

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were designed and have been built to meet every requirement of the farmer. Over 200,000 have proved this to their satisfaction.

This is the engine you need on your farm—the engine that has been proved up, that will save you money, worry and labor.

The "Z" Engine burns either coal oil, (kerosene) or gasoline.

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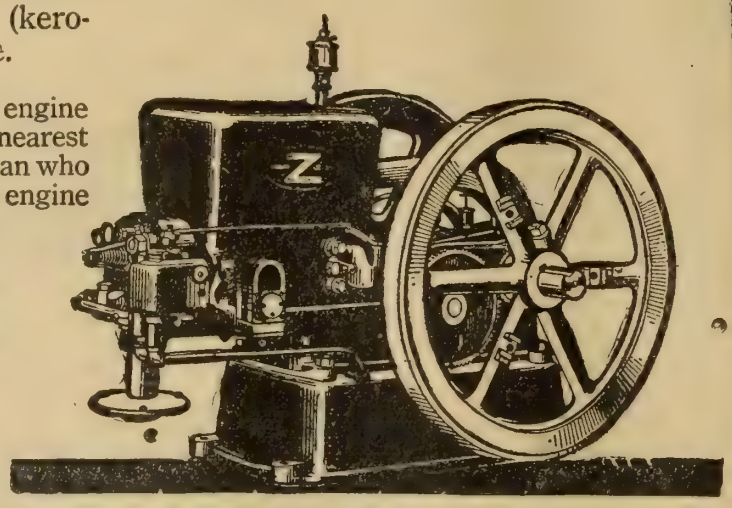

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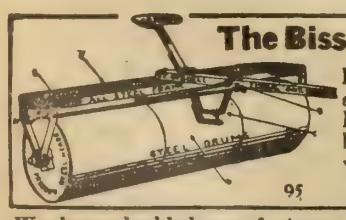

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WILDFIRE

Continued from page 24

slide with him. He snorted in fright. The avalanche started slowly and was evidently no mere surface slide. It was deep. It stopped—then started again—and again stopped. Wildfire appeared to be sinking deeper and deeper. His struggles only embedded him more firmly. Then the bank of sand, with an ominous, low roar, began to move once more. This time it slipped swiftly. The dust rose in a cloud, almost obscuring the horse. Long streams of gravel rattled down, and waterfalls of sand waved over the steps of the slope.

Just as suddenly the avalanche stopped again. Slone saw, from the great oval hole it had left above, that it was indeed deep. That was the reason it did not slide readily. When the dust cleared away Slone saw the stallion, sunk to his flanks in the sand, utterly helpless.

With a wild whoop Slone leaped off Nagger, and, a lasso in each hand, he ran down the long bank. The fire was perhaps a quarter of a mile distant, and, since the grass was thinning out, it was not coming so fast as it had been. The position of the stallion was half-way between the fire and Slone, and a hundred yards up the slope.

Like a madman Slone climbed up through the dragging, loose sand. He was beside himself with a fury of excitement. He fancied his eyes were failing him, that it was not possible the great horse really was up there, helpless in the sand. Yet every stride Slone took brought him closer to a fact he could not deny. In his eagerness he slipped, and fell, and crawled, and leaped, until he reached the slide which held Wildfire prisoner.

The stallion might have been fast in quicksand, up to his body, for all the movement he could make. He could move only his head. He held that up, his eyes wild, showing the whites, his foaming mouth wide open, his teeth gleaming. A sound like a scream rent the air. Terrible fear and hate were expressed in that piercing neigh. And shaggy, wet, dusty, red, with all of brute savageness in the look and action of his head, he appeared hideous.

As Slone leaped within roping distance the avalanche slipped a foot or two, halted, slipped once more, and slowly started again with that low roar. He did not care whether it slipped or stopped. Like a wolf he leaped closer, whirling his rope. The loop hissed round his head and whistled as he flung it. And when fiercely he jerked back on the rope, the noose closed tight round Wildfire's neck.

"By G—d—I—got—a rope—on him!" cried Slone, in hoarse pants.

He stared, unbelieving. It was unreal, that sight—unreal like the slow, grinding movement of the avalanche under him. Wildfire's head seemed a demon head of hate. It reached out, mouth agape, to bite, to rend. That horrible scream could not be the scream of a horse.

Slone was a wild-horse hunter, a rider, and when that second of incredulity flashed by, then came the moment of triumph. No moment could ever equal that one, when he realized he stood there with a rope around that grand stallion's neck. All the days and the miles and the toil and the endurance and the hopelessness and the hunger were paid for in that moment. His heart seemed too large for his breast.

"I tracked—you!" he cried, savagely. "I stayed—with you! . . . An' I got a rope—on you! An'—I'll ride you—you red devil!"

The passion of the man was intense. That endless, racking pursuit had brought out all the hardness the desert had engendered in him. Almost hate, instead of love, spoke in Slone's words. He hauled on the lasso, pulling the stallion's head down and down. The action was the lust of capture as well as the rider's instinctive motive to make the horse fear him. Life was unquenchably wild and strong in that stallion; it showed in the terror which made him hideous. And man and beast somehow

resembled each other in that moment which was inimical to noble life.

The avalanche slipped with little jerks, as if treacherously loosing its hold for a long plunge. The line of fire below ate at the bleached grass and the long columns of smoke curled away on the wind.

Slone held the taut lasso with his left hand, and with the right he swung the other rope, catching the noose round Wildfire's nose. Then letting go of the first rope he hauled on the other, pulling the head of the stallion far down. Hand over hand Slone closed in on the horse. He leaped on Wildfire's head, pressed it down, and, holding it down on the sand with his knees, with swift fingers he tied the noose in a hackamore—an improvised halter. Then, just as swiftly, he bound his scarf tight round Wildfire's head, blindfolding him.

"All so easy!" exclaimed Slone, under his breath. "Lord! who would believe it! . . . . Is it a dream?"

He rose and let the stallion have a free head.

"Wildfire, I got a rope on you—an' a hackamore—an' a blinder," said Slone. "An' if I had a bridle I'd put that on you.. . . Who'd ever believe you'd catch yourself, draggin' in the sand?"

Slone, finding himself falling on the sand, grew alive to the augmented movement of the avalanche. It had begun to slide, to heave and bulge and crack. Dust rose in clouds from all round. The sand appeared to open and let him sink to his knees. The rattle of gravel was drowned in a soft roar. Then he shot down swiftly, holding the lassoes, keeping himself erect, and riding as if in a boat. He felt the successive steps of the slope, and then the long incline below, and then the checking and rising and spreading of the avalanche as it slowed down on the level. All movement then was checked violently. He appeared to be half buried in sand. While he struggled to extricate himself the thick dust blew away and settled so that he could see. Wildfire lay before him, at the edge of the slide, and now he was not so deeply embedded as he had been up on the slope. He was struggling and probably soon would have been able to get out. The line of fire was close now, but Slone did not fear that.

At his shrill whistle Nagger bounded toward him, obedient, but snorting, with ears laid back. He halted. A second whistle started him again. Slone finally dug himself out of the sand, pulled the lassoes out, and ran the length of them toward Nagger. The black showed both fear and fight. His eyes rolled and he half shied away.

"Come on!" called Slone, harshly.

He got a hand on the horse, pulled him round, and, mounting in a flash, wound both lassoes round the pommel of the saddle.

"Haul him out, Nagger, old boy!" cried Slone, and he dug spurs into the black.

One plunge of Nagger's slid the stallion out of the sand. Snorting, wild, blinded, Wildfire got up, shaking in every limb. He could not see his enemies. The blowing smoke, right in his nose, made scent impossible. But in the taut lassoes he sensed the direction of his captors. He plunged, rearing at the end of the plunge, and struck out viciously with his hoofs. Slone, quick with spur and bridle, swerved Nagger aside and Wildfire, off his balance, went down with a crash. Slone dragged him, stretched him out, pulled him over twice before he got forefeet planted. Once up, he reared again, screeching his rage, striking wildly with his hoofs. Slone wheeled aside and toppled him over again.

"Wildfire, it's no fair fight," he called, grimly. "But you led me a chase. . . . . An' you learn right now I'm boss!"

Again he dragged the stallion. He was ruthless. He would have to be so, stopping just short of maiming or killing the horse, else he would never break him. But Wildfire was nimble. He got to his feet and this time he lunged out. Nagger, powerful as he was, could not sustain the tremendous shock, and went down. Slone saved himself with a rider's supple skill, falling clear of the horse, and he leaped again into the saddle as Nagger pounded up. Nagger

"Would you step on a cockroach—or would you refrain from staining the floor?"—*Roosevelt*

THE "ethics" of business call for courtesy between competitors—and the "ethics" of advertising also demand "truth in advertising." After observing the former, we find it absolutely necessary to "step on" some of the false claims and untrue propaganda of several separator manufacturers in an attempt to preserve a semblance of "truth" in their advertising.

We owe it to the dairy people of this country to present the real facts regarding cream separators. Propaganda based on the falsest of claims has been spread in an attempt to mislead North American farmers. In presenting these facts, we stand ready to prove every assertion; they are based on actual records of dairy history.

Official records show that the first cream separator was invented by the French, and that patent No. 105,716 was granted to the company of Fives-Lille, of France, November 19, 1874, for a "system of continuous centrifugal separation." A little later the Danes developed the cream separator and were the first to introduce cream separators into North America. Four years later, in 1878, a Swedish concern took advantage of the French invention and built a cream separator.

Looking for North American business, this concern contracted with Mr. P. M. Sharples, an inventive genius of West Chester, Pa., to manufacture, install, and repair their machines in North America. The first machines were decidedly impractical and unfitted for efficient use in North American dairies and creameries.

Mr. Sharples attempted for a few years to make of this foreign machine a satisfactory separator, and during this time invented all the great improvements that have since been used by this type of machine. Among his invented improvements were the discs in the bowl, the splash oiling system, the detached spindle, the lowering of the supply can, and the concave bottom bowl, which permitted a *part* of the weight of the bowl to be suspended below the bearing. The complication of the machine, however, soon caused him to give up this manufacturing contract entirely, and, with true North American ingenuity, he built a real North American separator, adapted to North American dairy needs and entirely different in that it was a most simple and efficient machine.

The Sharples factories are the oldest and largest separator factories in North America. They have always been entirely North American-owned. During the thirty-eight years of its existence, the Sharples Separator Co. has manufactured more separators than any other factory in North America, and the output of the Sharples factory to-day exceeds that of any other separator factory in the world. More Sharples machines are being sold than any other, and a much larger percentage of those sold are to-day in actual use.

Every North American dairyman should know these facts, and has the right to, and should, on buying a machine, ask the following questions of any separator manufacturer:

"Will your separator skim clean and deliver a cream of even density at any speed at which it may be turned? Is the bowl free from troublesome discs or blades? Has the separator an entirely automatic oiling system and do you guarantee your separator for durability to the extent that you guarantee a repair expense not to exceed $2.00 per year?

"Is your separator built in North American factories, by North American manufacturers, by North American labor, of North American material, and entirely owned by North Americans? Is it truly a North American separator, encumbered by no suspicion of taint of Hun propaganda?"

It is due to Mr. Sharples' untiring efforts during the thirty-eight years of his separator manufacturing experience—not to any foreign makers or inventors—that the North American farmer owes the modern efficient cream separator. The Sharples Suction-feed Separator is the perfected machine; all other separators are to-day where Sharples left off years ago—old style, bucket bowl, fixed feed machines.

We say, without fear of contradiction, that the modern Sharples Suction-feed Separator

—is the ONLY separator in the world that skims clean and delivers a cream of even density at widely varying speeds;

—is the ONLY separator in the world with a controlled varying capacity;

—is the ONLY separator in the world with a knee-low supply can, easy to fill;

—is the ONLY separator in the world with a perfect automatic splash oiling system, not a single oil cup;

—is the ONLY separator in the world with a hollow tubular bowl—no discs to wash.

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THE FARMERS' MAGAZINE, 143 University Avenue, TORONTO

Canadian Candy is wholesome

It produces real energy

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In Military Hospitals and Convalescent Homes candy was allowed to seriously wounded patients whose condition called for constant nourishment in a light, nutritious, easily-digested form.

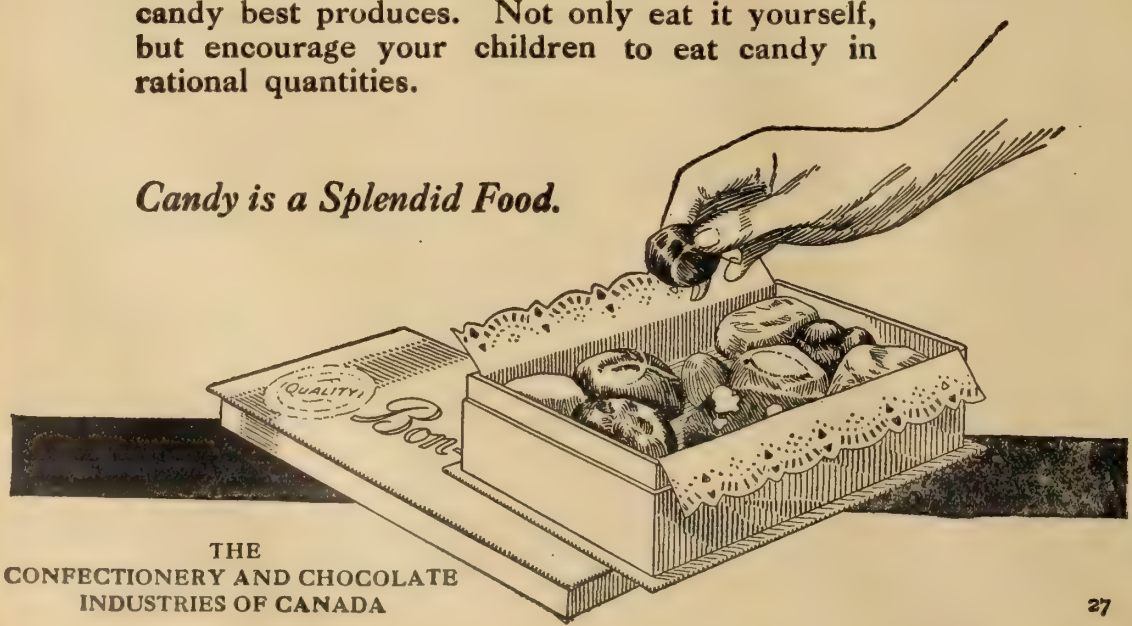
As the war progressed, the demand for candy grew to enormous proportions. Soldiers and sailors alike found by experience that candy produced real energy, while stimulants gave only deceptive temporary strength.

This war experience is supported by scientific opinion, and some misconceptions are set right in the following extract from the *Canada Lancet:*—

> "Candy and Chocolate are nutritious, stimulating foods. There is not the least scientific foundation for the opinion that eating candy is injurious to the teeth. The lack of sugar is much more likely to injure the teeth through impaired nutrition than even its excessive use is liable to do by any digestive troubles which might result from overuse.
>
> "In like manner there is little foundation for the common opinion that the consumption of candy causes digestive troubles."

Candy brings sunshine into the lives of children. Children are fond of candy because their bodies require fuel which candy best produces. Not only eat it yourself, but encourage your children to eat candy in rational quantities.

Candy is a Splendid Food.



THE
CONFECTIONERY AND CHOCOLATE
INDUSTRIES OF CANADA

27

braced his huge frame and held the plunging stallion. But the saddle slipped a little, the cinches cracked. Slone eased the strain by wheeling after Wildfire.

The horses had worked away from the fire, and Wildfire, free of the stifling smoke, began to break and lunge and pitch, plunging round Nagger in a circle, running blindly, but with unerring scent. Slone, by masterly horsemanship, easily avoided the rushes, and made a pivot of Nagger, round which the wild horse dashed in his frenzy. It seemed that he no longer tried to free himself. He lunged to kill.

"Steady, Nagger, old boy!" Slone kept calling. "He'll never get at you. . . . . If he slips that blinder I'll kill him!"

The stallion was a fiend in his fury, quicker than a panther, wonderful on his feet, and powerful as an ox. But he was at a disadvantage. He could not see. And Slone, in his spoken intention to kill Wildfire should the scarf slip, acknowledged that he never would have a chance to master the stallion. Wildfire was bigger, faster, stronger than Slone had believed, and as for spirit, that was a grand and fearful thing to see.

The soft sand in the pass was plowed deep before Wildfire paused in his mad plunges. He was wet and heaving. His red coat seemed to blaze. His mane stood up and his ears lay flat.

Slone uncoiled the lassoes from the pommel and slacked them a little. Wildfire stood up, striking at the air, snorting fiercely. Slone tried to wheel Nagger in close behind the stallion. Both horse and man narrowly escaped the vicious hoofs. But Slone had closed in. He took a desperate chance and spurred Nagger in a single leap as Wildfire reared again. The horses collided. Slone hauled the lassoes tight. The impact threw Wildfire off his balance, just as Slone had calculated, and as the stallion plunged down on four feet Slone spurred Nagger close against him. Wildfire was a little in the lead. He could only half rear now, for the heaving, moving Nagger, always against him, jostled him down, and Slone's iron arm hauled on the short ropes. When Wildfire turned to bite, Slone knocked the vicious nose back with a long swing of his fist.

Up the pass the horses plunged. With a rider's wild joy Slone saw the long green-and-gray valley, and the isolated monuments in the distance. There, on that wide stretch, he would break Wildfire. How marvelously luck had favored him at the last!

"Run, you red devil!" Slone called. "Drag us around now till you're done!"

They left the pass and swept out upon the waste of sage. Slone realized, from the stinging of the sweet wind in his face, that Nagger was being pulled along at a tremendous pace. The faithful black could never have made the wind cut so. Lower the wild stallion stretched and swifter he ran, till it seemed to Slone that death must end that thunderbolt race.

CHAPTER VIII

LUCY BOSTIL had called twice to her father and he had not answered. He was out at the hitching-rail with Holley, the rider, and two other men. If he heard Lucy he gave no sign of it. She had on her chaps and did not care to go any further than the door where she stood.

"Somers has gone to Durango an' Shugrue is out huntin' hosses," Lucy heard Bostil say, gruffy.

"Wal now, I reckon I could handle the boat an' fetch Creech's hosses over," said Holley.

Bostil raised an impatient hand, as if to wave aside Holley's assumption.

Then one of the other two men spoke up. Lucy had seen him before, but did not know his name.

"Sure there aint any need to rustle the job. The river hain't showed any signs of risin' yet. But Creech is worryin'. He allus is worryin' over them hosses. No wonder! Thet Blue Roan is sure a hoss. Yesterday at two miles he showed Creech he was a sight faster than last year. The grass is gone over there. Creech is grainin' his stock these last few days. An' thet's expensive."

To be continued

Selection and Care of Seed Corn

By HAZEL GOULD

Prize-Winning Essay at the Chatham Corn Show.

MY father has been a member of the Ontario Corn Growers' Association ever since it was organized in Essex, eleven years ago.

He has always been interested in seed corn. I too have had considerable experience selecting seed corn for him.

Seed corn should be selected from a field of corn grown from a choice strain of some variety recommended by the Ontario Corn Growers' Association, which is the most suitable for Essex and Kent Counties. It should be selected from the standing stalk.

Ears that are too high or very low should not be taken, as the high ones are very late in maturing and the low ears ripen too early to be cut with the main crop. Ears that grow about waist high are preferred, those with straight rows of cylindrical shape with well-filled butts and tips being the best. Tapering ears do not produce as much corn or as good a quality of seed.

The best time to gather the seed corn is generally about the middle of September when about half of the ears have dry husk.

There are a number of good ways of curing the corn. Probably the best way is what is called "peg drying," which consists of driving rows of nails in a post and placing an ear on each nail, which allows the air to evaporate the moisture in the corn so that the frost will not injure the vitality of the seed. Another good way is braiding the husks together, hanging it to the ceiling of the back porch.

In seasons like that of nineteen hundred and seventeen, corn cured in this way did not prove satisfactory, so artificial means had to be used to prevent the frost from spoiling the germ.

My father brought several bushels into the house, some of which he put between racks made of lath to prevent the ears from touching. He also put some on a post with nails and stood it near a stove pipe in a vacant room in the house and in this way had plenty of seed for himself and some to give to the neighbors.

My uncle bought some corn that was imported from the United States and, as the kernels were smaller, he put eight kernels in a hill and he had very thick corn.

These plans are good for a farmer's own use, but when you are raising commercial seed, one can not go to so much trouble to be profitable.

A WOMAN'S ADVENTURE AS SCHOOL TRUSTEE

Continued from page 13

Extension Department of the University of Alberta puts within the reach of rural communities splendid lecture on a wide range of subjects. These lectures are illustrated with lantern slides. After several lectures had been given by the Extension Department it was discovered that the Department would lend slides if the people could find someone to operate a lantern. Sure enough, the man with the necessary knowledge was located within the district, and as a result lantern slide entertainments were arranged much more frequently than could otherwise have been possible.

"But entertainment is not really what the people in the country are reaching for," says Mrs. Root, "and as a next move we asked for a field day with some of the scientists of the University. The University gave us a scientist for a day, and I would like to impress upon you that if you want to reach the hearts of farmer folks you want to take a scientist with you, someone who can read to them the book of nature."

When the scientist arrived at the station he was met by a party of ninety-five people. The only reason that the party was not twice as large was that more cars could not be secured for the day. All the school children from the different districts that could possibly attend were accommodated first with their teachers, and there wasn't much room left for the adults. The first object of interest visited was a limestone quarry, which was a peculiar formation, being the only piece of limestone in the whole country. The children broke the limestone and found the hidden fossils, and listened to the story of the formation of the limestone. From the stone quarry they went to a gravel pit and heard here unfolded some more of the wonders of nature. Nor did the story lose in interest at the next stopping place, a coal mine, and Red Deer Lake, a glacial lake without an outlet, revealed a story which seemed a fitting climax to the many wonders the children had already heard.

Back again at the starting point supper was served to the party in the community hall, and in the evening the whole party, with many others who could not attend the geological tour of the day, listened with rapt attention to a lecture by the scientist, illustrated with lantern slides showing the fossils of Alberta.

"We are particularly pleased with the success of our geological tour," says Mrs. Root, "because we found within our own environment things of such interest as to hold the undivided attention of the entire party throughout the entire day. The country is no longer a no-account place to those boys and girls. Everyone who attended will tell you it was one of the wonderful days of their lives, but in spite of the oft-repeated eulogies of many of the elders I feel that the finest compliment came from the lips of a small boy. We had picked him up on his way to school, and though I didn't recognize him he knew me. "Mrs. Root," he inquired, "when is Dr. Allen coming again?" "Were you in the party that day?" I asked. "Oh, yes." "Did you like him?" "Oh fine, he was lots better than moving pictures."

The School a Seed Centre

"We tried one scheme," Mrs. Root admits, "that failed utterly in its original intention. There were a number of boys in the community who, through pioneering conditions, had missed the opportunity of even a good public school education. We thought something might be done for them by planning a course under the Dean of Agriculture through the Extension Department of the University. A number of them promised to take up the work, but when the Dean came and gave his introductory lecture they all flunked. It was plain that it would require considerable study, and they feared their ability to master it successfully. But the venture was productive of good results nevertheless. The farmers, as a result of the Dean's lecture, decided to start a seed centre if he would come and give them a start. And the Dean came and the seed centre was started and has flourished ever since."

"And what are the prospects regarding the prize you covet at the end of your rainbow?" we inquired.

"What would you think they were," she inquired, "if you saw the whole community awakening to a keen appreciation of the value of higher education? We are beginning to feel reasonably sure of the ultimate success of our object."

Meanwhile there are some men in a certain neighborhood who have forgotten their one-time prejudice against women members on their school-board. They realize that the women have shown an initiative and an executive ability which it would be hard to duplicate. The result of every scheme they have tried has more than justified the effort.

But there is yet an untold item of this tale that deepens its romance. Several years ago Mrs. Root suffered an accident, and ever since has had to walk on crutches. The splendid work she has accomplished as prime mover in these schemes has been accomplished under this handicap.

Most Accurate Ever Invented

Are you content to go on in the old-fashioned way using all your available farm help planting by hand, limiting your acreage because of labor scarcity, and keeping your help away from other pressing work in busy season?

Get an O-K Canadian Dial Planter and get your planting done accurately without seed waste and in a fraction of the usual time.

The O-K Canadian is the only planter that has the endless cup seed dropping device. It does not pick or bruise the seed. It is noted for being the most accurate system yet invented.

O-K Canadian Potato Planter

From the roomy steel hopper the seed is picked up by cups and deposited on revolving dial plate. This makes it simple to make any corrections necessary. Absolutely one piece of seed goes to each hill, thus making your seed go farther. Five years' tests demonstrate accuracy close to 100 per cent.

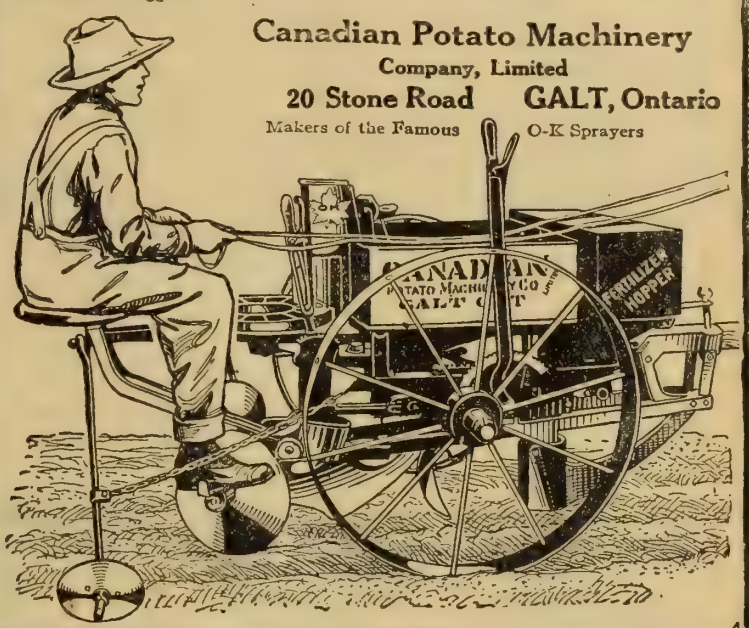
The O-K Canadian has equipment for correct depositing of fertilizer. Furrows are opened by two shoes. The first opens a trench to receive the fertilizer. The second shoe opens the furrow deeper, mixing fertilizer thoroug 'y with earth, thus protecting seed when dropped. This is correct and necessary for proper fertilizer results.

You certainly ought to get full particulars about the O-K Canadian, the machine that will enable you to put in more acreage into this profitable crop at low cost. Write to-night for free literature giving full particulars of O-K Canadian Planters and Diggers.

Canadian Potato Machinery Company, Limited

20 Stone Road GALT, Ontario

Makers of the Famous O-K Sprayers



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CANADIAN EXPLOSIVES LIMITED TRADE CXL MARK

Stumping

—means bigger farm profits

It is the modern way to farm—the way to develop the new farm or improve the old. C. X. L. Stumping Powder is your means of speeding up labor and of increasing acreage or crops.

C. X. L. will clear away stumps and boulders, drain or irrigate your land, and is an invaluable aid to the fruit grower. C. X. L. Stumping Powder will do the work of a man, two horses and a stump puller in removing stumps, and do it twice as fast at less cost. It will ditch bog land in half the time it can be done any other way.

C. X. L. will make the holes and break up the hard pan for tree planting—insuring earlier maturing, healthier trees than those that are spade-planted.

Our book—"Farming with Dynamite"—is valuable to you if you are farming for profit. Send for your free copy today.

There is money in Agricultural Blasting. Write for proposition.

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No More Galls if You Use This Open-Throat Cotton Collar!

On over a million farms this cotton collar is being used in preference to leather. Not because they are cheaper or save leather for other needs, but because the Lankford Humane Collar means freedom from galls. Gall-afflicted horses work in them every day, and shoulders heal while in harness.

Made of closely woven army duck, like a surgical bandage. Stuffed with soft, springy cotton fiber that absorbs sweat and impurities from sores. Keeps neck dry and cool.

Made with an open throat that gives pulling muscles full play—moves with the pulling muscles, instead of chafing against them. Cannot sweeney. Will not pack or harden—often lasts three or more seasons.

Dealers sell them on the guarantee that galled horses get well while working in Lankfords. If your dealer cannot supply you, send us $2.50, and we will ship you a collar, charges prepaid. (7-2c)

Trade Mark

Lankford HUMANE HORSE COLLAR

Price $2.50 Delivered. Note the open throat—can't rub the shoulders

THE POWERS MFG. CO., Box 20 Waterloo, Ia.

COWAN'S PERFECTION COCOA

START THE DAY RIGHT

with a cup of this delicious Cocoa for breakfast. It makes a splendid foundation for the day's work.

Retains the Natural Flavor of the Cocoa Bean.

Made in Canada
THE COWAN COMPANY Limited
Toronto

G-1

A FARMER'S BEEF RING METHODS

By F. W. Gibson

As this is a good time to organize a beef ring to secure your supply of fresh beef for the summer months I give to the readers of FARMERS' MAGAZINE the plan on which our ring is organized and run. It is a twenty-share ring, and as cattle are supposed to dress from 400 to 450 pounds, each member receives from 20 to 22½ pounds each week. The beast is taken to the slaughter-house the day or night before it is killed, thus giving it a chance to cool off before being killed. The cuts are all numbered and the party receiving cut No. 1 this week receives No. 2 next week, and so on until he receives the whole beast. In quartering the beast, cut between 10th and 11th ribs or in other words there are 10 ribs in front-quarter, out of which cuts 1 to 5 and 6 and 8 are taken, but as they are not heavy enough, the balance comes out of the hind-quarter. Cuts 7, 9, 10, are taken out of hind as will be seen

	1 J. Jones	2 W. Gee	3 J. Puckin	4 W. Wilson	etc to 20	Total lbs	Members
1	20	2	21	3	20½	4	22		420	J. Jones
2	21	2	19	3	21	4	20		450	W. Gee
3	19	2	20	3	22	4	21		etc.	J. Puckin
4									etc.	
5										
6										
⋮ to 20										
Totals	lbs 430		400						6225	

The Tally Board for the Beef Ring

by chart. The other half or side is cut in the same way, giving cuts 11 to 20. A butcher is appointed who has to kill beast, cut it up, weigh it and keep an account of weight of each beast and how much each member has received during the 20 weeks. The butcher and two other members are appointed inspectors. If any member brings in a beast which the butcher thinks is not up to requirements, he calls in the other two inspectors, and if they reject the beast the member has to take the beast away and supply another one that is up to standard.

The following is a plan on which our books are kept and ours are the best I have seen kept by any ring. We have a board about 30 inches long by 18 inches wide over which we fasten paper; we then rule the paper off into blocks thus. By so doing you can see at a glance just what each member put in and got out.

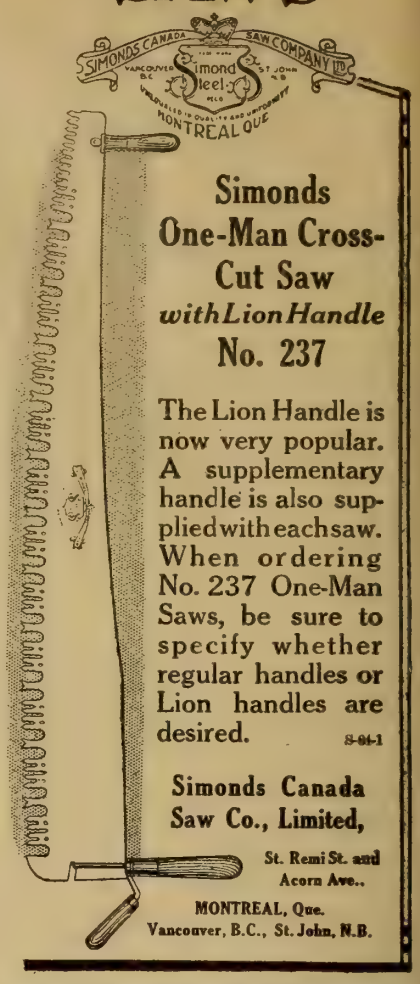
Each share takes up two blocks, one block is for number of cut, the other for weight. The figures at bottom of board show how much each member received and those on the right how much he put in. Thus it will be seen that J. Jones put in 420 pounds and got out 430 pounds, leaving 10 pounds for him to pay for, the price of which is set by members at the annual meeting. 25 cents per pound is the price set for our ring this year. In making out the books the total of figures on bottom must equal total of figures on the right or you have made some mistake in adding.

We kill first beast the first Tuesday in June and hold our annual meeting the first Tuesday night after the last beast is killed. At the annual meeting the officers for ensuing year are elected. It is necessary for those who have to pay into the ring to be present at the meeting so as to get the ring business straightened up for the season. We find it the cheapest and best way of securing choice beef for the summer.

Should a member put in a beast that dressed out 500 pounds he would have 50 pounds to dispose of as best he could, which isn't a very hard thing to do in this section.

In some sections the members supply the slaughter-house, hooks, scales and other equipment that is required, charging each member 25 to 50 cents for the season; but in our ring the butcher, being a good-natured sort of a fellow, supplies everything but the cattle and occasionally has that to do also.

SIMONDS SAWS



Simonds One-Man Cross-Cut Saw *with Lion Handle* No. 237

The Lion Handle is now very popular. A supplementary handle is also supplied with each saw. When ordering No. 237 One-Man Saws, be sure to specify whether regular handles or Lion handles are desired. S-91-1

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KEITH'S SEEDS

THE FARMERS SEEDSMAN — FIFTY-THREE YEARS' SERVICE 1866 1919

ALACRITY TOMATO SEED

Specially grown for Northern climate. This is the very best and earliest grown of all Tomatoes. It originated at the Ontario Experimental Farm, Ottawa, and is the result of a number of years' careful selection. The fruit is round and deep, with a good, rich red color. Flesh firm and excellent quality. A great bearer—ripens two weeks ahead of other early varieties. TRY SOME THIS YEAR. Pkt., 25c. Oz., $2.

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SEEDS

We guarantee our seeds to be satisfactory, or if not, they may be returned at our expense. Our prices are the best obtainable on—

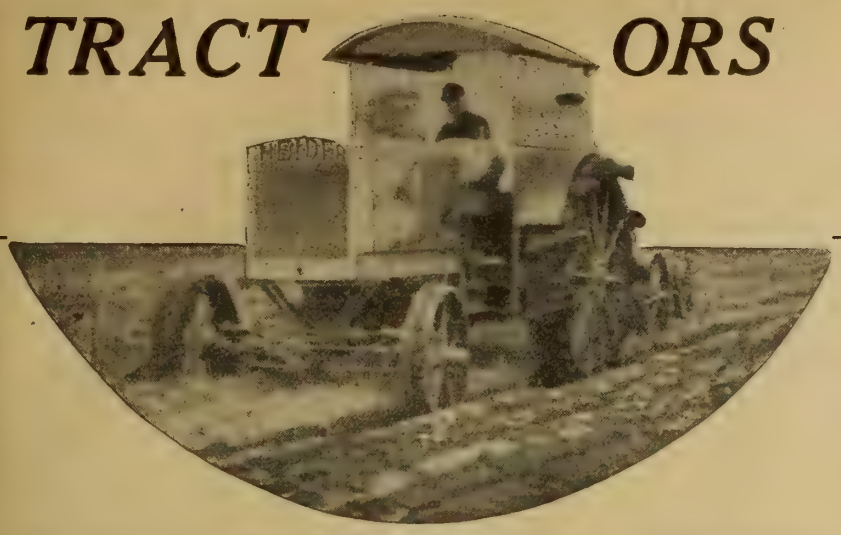
Red Clover, Seed Corn (Ont. grown from Ont. grown), Alsyke, Alfalfa, etc. Write for list which we will gladly send free on request.

FEEDS

We can usually save you money on Feeds, whether for your livestock or poultry. Write for prices on Feeding Cane Molasses, Cotton Seed Meal (38½% Protein), Bran, Shorts, etc., etc.

CRAMPSEY & KELLEY DOVERCOURT ROAD, • TORONTO

HEIDER
TRACTORS



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that never jerks your machinery

The Tractor With Power That Makes Plows Dig Deep and Turn Over The Toughest Sunbaked Soil Hour After Hour

2 SIZES { Model D 9-16 H.P.---2 Plows
Model C 12-20 H.P.---3 Plows

The Heider is no experiment—IT HAS MADE GOOD in every known kind of farm work. And users of wide experience accord it the lowest upkeep cost of any tractor they've used.

SIMPLE IN CONSTRUCTION—EASY TO HANDLE—BURNS COAL OIL OR GASOLINE.

Hands operate the tractor while your foot raises or lowers the plow. Automatic power lift. Gets into the fence corners easier than you could with a team, and plows all the field.

Seven Speeds—forward or reverse, with one lever and without changing gears.

The Heider is built and sold by a Canadian Company enjoying **60 years' reputation** for high-grade farm machinery.

"There's a size to suit your farm"

Get your 1919 order in early! Write today for illustrated catalog and full information.

The Waterloo Manufacturing Co., Limited
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Western Headquarters: PORTAGE LA PRAIRIE, MAN. Branch Warerooms: Regina and Saskatoon.

These Seven Cows

Kept 1 Year on the Product of 1 Acre

Keeping seven cows for a whole year on the product of one acre goes a long way towards reducing the cost of milk. On one acre of land in the State of Michigan, **Ross' Eureka Ensilage Corn** produced, in one year, 70 tons and 800 lbs. of the best quality of sweet ensilage. At 50 lbs. per day, this would feed seven cows for one year with enough left over for 261 feeds.

ROSS' EUREKA CORN grows the tallest, has the most leaves, is very short jointed and will produce more tons of good, sweet ensilage per acre, than any other variety. If you plant cheap corn you will reap accordingly. We have been selling Eureka corn for nearly 40 years and we know before shipping that it will grow under favorable conditions. This corn usually germinates 90 per cent. or better.

Ross' Eureka Corn

Waterford, Pa., R. F. D. No. 4
November 12, 1918.
Dear Sirs:—In regard to Eureka Corn, will say that I had a splendid stand of corn, don't believe I ever had any better. I have always found your seed corn to be first-class and will want more in the spring.
J. C. BONNELL.

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Dear Sirs:—In regard to the Eureka Seed Corn, will say I had the best of luck with what I received, think fully 95% grew. Send price list next year as will want seed next spring.
WALLACE BUTTS.

ROSS' EUREKA CORN is only one of our specialties. Complete line of Farm Seeds: Oats, Rye, Barley, Wheat, Buckwheat, Cow Peas, Vetch, Soy Beans, Essex Rape, and all varieties of Field and Ensilage Corn; Grass Seeds, including all kinds of Alfalfa and Sudan Grass. Also full line of Agricultural Implements, Poultry Supplies, Fertilizers, etc. Our 120-page catalog will be mailed free on request.

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Treat Horses Right

When you go to work on the first warm spring day you throw off your winter overcoat. But horses can't throw off their winter coats. Do it for them by clipping with a Stewart No. 1 Machine. Soon pays for itself in better work from horses. Get one from your dealer; if he can't supply you send us his name. Send for new 1919 catalog.

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More Water More Milk

25% More Milk From Cows When Given Enough Water

Why is it that many cows are such poor milkers? Why don't they give enough milk to pay the cost of their feed?

The first reason is that many cows do not get enough water. Milk is 87½% water, and a good milker has to drink 4 gallons of water to produce a gallon of milk. To produce 3 gallons (30 lbs.) she must drink 12 gallons of water per day.

Now, no cow will drink 12 gallons of icy water from a freezing trough.

The BT Water Bowls Increase Milk Yield 25%

The BT Water Bowls increase the milk yield because they provide a constant supply of water at an even temperature. The Cow can drink the water as she needs it and in 24 hours will drink more than 12 gallons. She will drink all she needs for her maximum milk yield.

Water Bowls Pay Back Their Cost in Two Months

The BT Water Bowls will increase the milk yield of your cows enough to pay back the cost of the bowls in two months. They increase the milk yield the first day they are used. Some farmers declare that it is like the cows coming in fresh again.

Drop us a line and we will be glad to send particulars about the BT Water Bowl. Illustrated catalogue is free.

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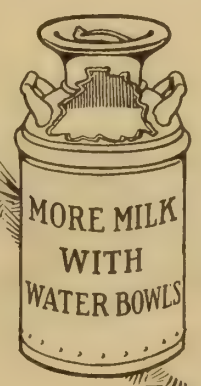
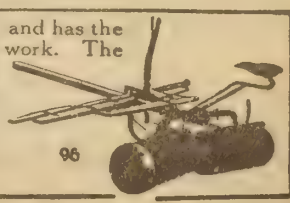


BT TIME SAVER TRADE MARK

BT STEEL STALLS
MANURE CARRIERS
HORSE STABLE FITTINGS
HAY CARRIERS
DAISY CHURNS
PUMPS - WASHERS

The Bissell Disk takes hold of any soil, and has the "knack" of doing great work. The Disk Plates are of special design—they cut and turn the soil over. The draught is lighter, too, than any other Disk. In fact, you won't find another Harrow that can begin to compare with the record of the Bissell. Write Dept. Y for free catalogue.



T. E. BISSELL COMPANY, LTD., ELORA, ONT.

We have doubled our factory capacity and are determined to supply our customers far and near. See advertisement also on page 26.

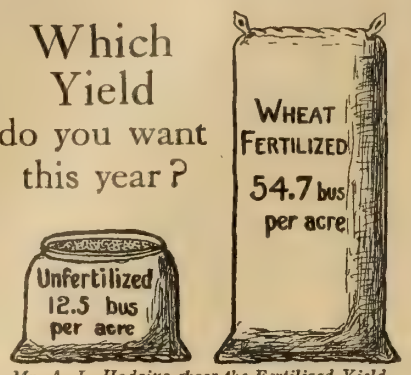
Wheat Yield was Increased Four Times

"I threshed the whole field (10 acres) and measured from the machine 547 bushels, a pretty good yield and a good sample."—Writes A. L. Hodgins, Ettrick, Ont.

Unfertilized wheat from a measured test plot yielded only 12.5 bushels per acre, a gain of 42.2 bushels per acre for fertilizers.

"Results of fertilizing are 4-to-1 in favor of fertilizers." So says Mr. Jas. Peters, Mt. Brydges, Ont.

Which Yield do you want this year?



Mr. A. L. Hodgins chose the Fertilized Yield.

GOOD tillage, good seed and abundant use of high grade fertilizers make crop yields highly profitable, and grass "catches" sure.

Fertilizers Hasten the Ripening of Crops

Farmers say:

"We were husking two weeks before any of our neighbors could husk, who did not fertilize. Our corn matured well and we are selling for seed."—E. F. KELLY, Watseka, Ill., 1918.

"In regard to barley, the sample from fertilized was very much heavier than the unfertilized, and we cut it 7 days sooner. It went at least 15 bus. more per acre."—I. WYLIE, Caledonia, Ont., 1919.

Fertilizers improve the quality of the crop too. Analyzing and comparing fertilized and unfertilized wheat, Ohio Experiment Station found that the unfertilized grain analyzed 49% plump and 51% shrivelled, while grain from the fertilized plot analyzed 94% plump and 6% shrivelled. Minnesota Experiment Station reports that fertilized oats had a higher per cent of protein than unfertilized oats.

Feed your young crop readily digestible plant food and so benefit by bigger yields of better quality.

It Pays to Fertilize

Write for Free Bulletins on Crop Production

The Soil and Crop Improvement Bureau

of the Canadian Fertilizer Association

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Reliable Customers Say So. Filling orders over 40 years. Direct to Planters. No Agents. Send for Price List.

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For Worn Out and Acid Soils, try

White Star Pulverized Limestone

95% Carbonate of Lime

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FRUIT GROWING

Pruning Apple Trees May Be Bad

By PROF. W. H. CHANDLER

I MIGHT say in the beginning that I have been able to prune, myself, over 1,500 trees in experiments. I like the subject of pruning, but it is exceedingly difficult to talk about it thus far separated from the trees, and I hope you won't expect me to give you advice. However, it is worth while to review the subject generally and separate those things that we know are right from those that we must do, even without adequate knowledge as to whether we are doing the right and best thing or not.

The results that follow any kind of pruning are very complicated. Thus a pruning given during this winter or spring may have the effect of reducing the yield next summer, but of increasing it the second after the pruning is done; or it may have the effect of reducing the yield during several years, but still be profitable because it prolongs the life of the tree. In pruning to shape the tree, the effect of a system of training adopted when the tree is young may not be known in a climate like that of New York for fifty years, even if the same system is followed, during the life of the tree. For this reason, our knowledge concerning the best methods of pruning is very meagre indeed.

Top Pruning

Concerning the immediate effects of cutting away parts of the tree top in pruning, we can speak with more certainty than concerning the effect of any particular shape on the bearing of the tree. Thus, it is common knowledge among people who have had experience in pruning that cutting away part of the top of a tree during the dormant season increases the vigor of growth during the following season of adjacent twigs that are left. The new shoots will be longer, the leaves larger, and growth will continue later in the season. It is also true that this new growth is generally stockier.

In spite of this increase in vigor, the effect of pruning is to reduce the total amount of growth. Although the growth following pruning is more vigorous there are fewer growing points. Not only is the new growth insufficient to replace what has been removed, but in actual fact less growth is made than on the unpruned tree. In other words, in case of two trees, one rather severely pruned and the other unpruned, the unpruned tree will be larger than the pruned tree by more than the amount of growth that has been removed from the pruned tree. The explanation of this is the fact that the pruning, by removing buds that would open into leaves, reduces the foliage. In our own pruning experiments, we have found a marked reduction in the total leaf surface of those tree that have been pruned with any degree of severity. When it is remembered that the material from which the entire tissue of the tree is built is elaborated in the foliage it will be seen that this reduction in growth would be expected to follow a reduction in foliage, unless an improvement in the water supply or other conditions for growth should be associated with the pruning.

An Example From the Nursery

Thus, with some one-year-old apple trees in the nursery, where the leaves were removed early in the summer to a height of about twenty inches on fifteen trees, at the end of the season the weight of the roots was 38 per cent. less and that of the tops 40 per cent. less than those of the unpruned trees that were no larger at the beginning of the experiment. It will be seen then that the foliage, even on a branch that must come out later, may be of value to the tree by increasing the growth of roots and the size of the trunk.

Not only does pruning reduce the size of the tree, but even more markedly it reduces the fruitfulness during the early years of the life of the tree. In the experiments done by Pickering, which are by far the most extensive in this line, the fruitfulness of severely pruned trees was reduced, during the first fifteen years of the life of the tree, by more than 100 per cent. Of course, no one in this state would consider such severe pruning as Pickering was doing, *but in our own experiments we find that the relatively small amount of pruning necessary to shape a tree to an open head reduces the fruitfulness, at least during the first few years.* In this pruning, few of the trees had more than two pounds of wood removed in a year, and yet the effect has been appreciably to dwarf the tree and to reduce the fruitfulness, though, of course, not to anything like so great an extent as when they were pruned as severely as Pickering pruned.

It Helps on Old Trees

While it is true that any amount of pruning on young trees reduces the fruitfulness, we cannot be so sure with reference to old trees. Some evidence indicates that pruning actually stimulates better fruitfulness in the old trees. The effect of pruning with the old trees as with young trees would be to increase the vigor; and an increase in the vigor of individual spurs of the trees has been shown to increase the percentage of sets in years like the past two, when conditions are not favorable for pollination at blooming time. Fewer seeds, in other words, less perfect pollination, will hold the fruit on a vigorous strong spur rather than on a weak one.

It makes much difference, however, how the pruning is done. Thus, if any limb is cut back severely we expect water sprouts or increased growth in the part left, but that increased growth comes close to the point where the cut is made and very litle effect is seen on the other growth of the tree. Even the whole top of the tree may be cut off without greatly affecting the vigor of the lower portion of the tree, except at the ends of the cut branches. If pruning, then, is the result in the stimulation of better growth in the spur and in the formation of more new spurs, it must be distributed through the top of the tree, cutting back from the ends to good side twigs or branches. Such pruning may be considered rather expensive, but it should be borne in mind that not all parts of the tree would need such pruning on every year, but that during a period of two or three years all parts of the tree would have some of this renewal pruning.

Time for Pruning

We can be reasonably certain, also, about the time of pruning. The experimental evidence shows rather conclusively that it makes not the slightest difference in what portion of the dormant period the trees are pruned, and they may be pruned even as late as blooming time without in any way affecting the vigor of growth of the new wood. The effect of pruning in summer is different in different sections, depending largely upon the length of the growing season. In most sections, the effect is to reduce fruitfulness to about the same extent as an equally severe pruning in the winter would do and to dwarf somewhat more than equally severe pruning in winter would do. In some sections, where the growing season is long, pinching or cutting off the ends of the twigs in summer at exactly the right time may increase the number of fruit buds formed.

New York Prunes Little

The system most commonly recommended, if not practised, in New York State, *is one of very little pruning.* The branches of the young trees are not permitted to come out so near each other that there will be injurious crowding; otherwise, the tree is permitted largely to shape itself. Unquestionably, by this system more fruit will be secured during the early life of the tree. As to whether or not this would be true throughout the life of the tree, we have no information. In following it one takes the least risk since most apple growing sections really practise little shaping. Of course, more pruning during the early life of the tree will be required to secure the open head than to secure this last form. But as to which of these shapes would be most profitable in the long run, there is no information.

Winter Apple Pruning

Would you advise the pruning of apple trees in the winter when the temperature was probably 20 or 25 below zero?

I would ask Prof. Macoun to answer that.

"I have never seen" said Prof. Macoun, "any injury from winter pruning. We have pruned at Ottawa. The only chance of injury is that the bark may loosen for a little distance back from around the wound. It does not heal over as quickly, probably, but it is only a temporary injury."

"I have seen serious results from the pruning in the fall," said Prof. Crow, "which seemed to me to be due to the fact that there was a long period in the winter through which to dry out. I think there is serious

risk in cutting large limbs or limbs of about 1½ in. in size."

"I am not without fear," replied Dr. Chandler, "that might be so, but I have pruned very many trees at all times of the year and made large wounds, and I can at least say it is not important."

Prof. Crow said that he damaged some 30 or 40 apple trees very seriously by pruning in the fall, in November or December, for the purpose of finding out whether there was any injury involved. They were a very hardy variety like Duchess and Yellow Transparent. Several died around the wound; sometimes there was a strip of dead bark from a foot to a foot and a half.

"In 1903, on the 15th of November, the winter came in very suddenly," said Mr. Harris, "and I killed 125 trees about 20 years old. In the spring of 1904, I had Prof. Hutt come to look at my orchard, and he thought they would survive, but not one that I pruned lived. I had nine trees that I trimmed about the 1st of December that were nine years planted, and I did not take off anything as large as my little finger and it killed every one."

Apple Pruning Questions

When you are putting out a young tree, how many branches would you leave?

Personally I do not feel an apple tree ever has room for more than one main branch and about four others, at the time you start. I would leave these and cut off the rest; later I might shorten the ones I left back, but you would be surprised how little difference it makes.

Would that tree thrive better the first or second year if there was nothing done?

It would not look as good, but it would thrive as well; by the time it came into bearing it might be a little bit ahead of the others because of not having these leaves cut off. In Missouri and Nebraska, the loss of water is more a question of sunshine, and if I were out there I would shorten the tree back more than in the East where we get a good deal of mist and generally some rainfall.

Could you do anything in pruning to apple trees about 25 or 30 years of age which produced fine wood growth but no fruit, in order to check that?

The more you prune the more you encourage that.

Do you know anything about peeling the bark to stop that?

Yes: you can peel off the bark if you do it at the right time when the wood is growing, and throw the tree into bearing. I have seen a good deal of that done, and I have seen a good sized orchard killed by it. It is not as advantageous here as it would be in a drier or sunnier climate.

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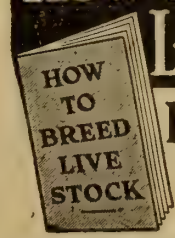

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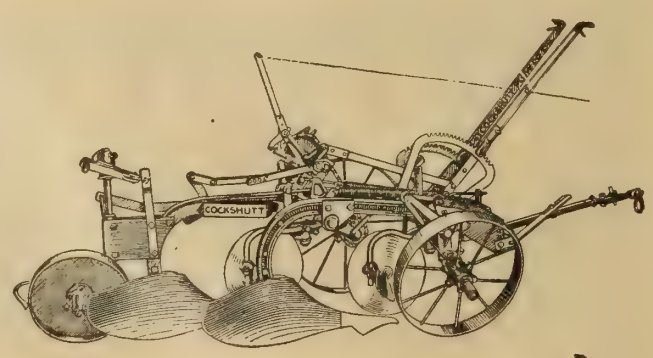

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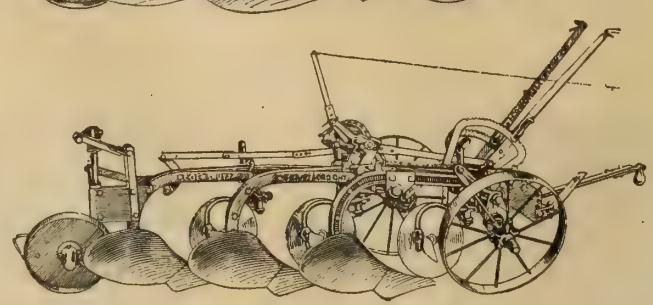

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EXPERIENCES ON THE PEACE RIVER

By CHINOOK.

"A MISTAKE made by our neighborhood," explained a discerning settler from an outlying district, the other day, "was in going at cropping the wrong way about. Many of us tried to grow wheat from the start. What we should have done was to go in for the coarse feed grains and touch the soft pedal on wheat until more of the country was broken up and frost risks decreased."

Sound sense! He might have added that the average new s ttl r has no business to do a great deal of experimenting nor to risk his meagre resources on uncertainties. A little experimenting is commendable for many reasons; and it is seldom wise to put all eggs into one basket by staking the year's harvest on any single crop. On the other hand, it is important to have a shrewd eye open for the main chance, to grow the surest crops and practise the safest methods, hitting some good likely line hard enough to make the effort count. The writer's case is somewhat exceptional in that he is employed to do a certain amount of experimenting, incidental to the prosecution of his ordinary farm work. This correspondence is one of the means chosen for spreading the information thus obtained.

Oats the Best Crop for Northern Settlers

By far the best grain crop for most Northern settlers is oats. Of all cereals, oats are the surest to mature a crop of feed grain in districts subject to frost; they may be fed to excellent advantage without threshing and in case they do not ripen, they will still make very acceptable fodder for horses, cattle and even brood sows. Whether threshed or in the straw, oats are a wholesome feed. An extensive series of experiments in Wisconsin demonstrated that for breeding cattle they were second to corn and far superior to wheat, the straw of which is deficient in certain mineral constituents that parturient animals require, as well as being inferior in protein and fat. Abortion and weak progeny are believed to result from the extensive feeding of wheat straw. Horses and cattle may, if necessary, be wintered exclusively on sheaf oats or even good oat straw, with very fair results. Hogs may be wintered on oat bundles carrying only a scant proportion of grain in the heads. Poultry will get along on mature unthreshed oats and while other grain for them is very desirable also, a sheaf or two a day in the poultry pen will provide exercise and a very acceptable addition to the ration.

Probably the best early oat is the Daubeney. In the plot tests last summer it gave us 101 bushels per acre as against 111 of Abundance and 122 of Ligowo. It ripens in the same period as six-rowed barley and though long and slender of kernel, like all other early oats, it has such a thin hull that the actual percentage of meat is greater than in the case of some standard oats which are much more prepossessing in appearance. The Daubeney would be distinctly at a disadvantage as a market grain, but for one's own feeding it is all right. To the best of my information it is a better yielder and makes rather a better sample than the much advertised Orloff, Eighty-Day and other sorts, though not quite so early as the Eighty-Day. We used to hear about Sixty-Day oats, but the name is misleading. There is no such thing in the Canadian West. I must be candid enough to add that Daubeney and Eighty-Day are the only two very early oats with which I have had personal experience.

Limited Place for Barley

Barley is a most excellent grain to supplement oats for hog feed; but new settlers who lack threshing facilities and have, moreover, to run the gauntlet of summer frosts should have little to do with it. Bearded barleys are difficult to thresh satisfactorily by hand. It requires a great amount of tedious work to break off and separate the awns. Without threshing, barley is a risky crop to feed to any class of stock because of the awns. It is very susceptible to late-summer frosts. A temperature which will leave oats unscathed (so far as filling of the grain is concerned) will badly blast a crop of barley, resulting in many shrunken and meatless kernels. If the frost occurs while the barley is just nicely headed out, it may kill the heads while the beards are still soft and pliant, and the crop may then be cured into good, safe, cattle fodder; but the frosting is more likely to occur at a later stage, in which case one must thresh the crop in order to make the straw safe to feed. Of course, there are beardless barleys, to which this statement does not apply, but none of the beardless barleys are reputed to be good yielders. I had the Success once, but found it anything but a success. It yielded poorly,

rusted and shattered badly. I believe, though, that in a neighborhood without threshing machines I should prefer it to the bearded sorts. Cattle eat it greedily from the sheaf. One objection to it is that once grown on a farm it will keep on volunteering indefinitely, owing to its earliness and tendency to shatter readily. The best all-round barley I have found is the O.A.C. No. 21, a six-rowed kind. Manchurian is also good, but shatters too easily in a wind. Early Chevalier is an excellent two-rowed variety, producing a fine large sample of grain, but not yielding quite so well as a rule. It has, however, the advantage that in a high wind it will lose many of its beards rather than shelling out so many of its kernels.

A Hardy Spring Wheat

Wheat is a crop on which new settlers in Northern regions should go light. A little may be tried, for at the worst it may be fed in the sheaf, and if matured it will make breadstuffs and chicken feed. It should usually be sown as early as possible on land well prepared the previous season. I have found Huron a hardier and more prolific variety than Marquis. In four years' tests it has outyielded the latter by thirty per cent., the difference being especially conspicuous in frosty seasons. It is a red-chaffed, bearded wheat, not extra difficult to thresh, yet never giving me any trouble from shattering. It will not make so white a loaf of bread as Marquis, but is supposed to be a passable bread-making variety and just as valuable as Marquis for producing pork or eggs.

Winter Rye Promising

Winter rye is a crop that would seem worthy of more attention than it receives. It will come through safely where fall wheat kills out. It remains green later in the autumn and commences to grow earlier in the spring than any other crop we know of. We had plot yields last year of over fifty-seven bushels of good grain per acre. A spot of crude, raw, subsoil yielded thirty bushels of wheat. Though responding to good soil it will endure adversity better than most crops. My experience with rye is limited to a single season, but we are encouraged to experiment further.

A Hundred Dollars for a Wild Oat

"If I had one wild oat on my homestead I would gladly give anybody a hundred dollars to find it," remarked a shrewd farmer last fall. He was a Dakota man, who, like many others among us, had left that state partly because of the foul condition of so many farms there. He was not what one would call an "over particular" farmer, but he knew wild oats to his sorrow. The lesson of his experience should not be lost upon settlers in new districts. It were a thousand pities to soil the new nest with weed filth from the old. Examine purchased seed grain with the utmost care and caution. Keep the homestead clean as possible. There are plenty of native weeds to cope with and plenty of others will come with the best of care, especially when one commences to buy grass seeds. Eternal vigilance—

Test All Seed Oats

Most Western settlers understand tolerably well the relative effect of frost upon the viability of various grains, but a word of caution will not be amiss. Oats are the most deceiving cereal as regards germination, for a plump sample, looking attractive to the average man, may have sustained frost injury which has gravely impaired its germinating qualities. Experienced farmers know better than to trust appearance on seed oats. They test them as a matter of course. If disinclined to make the test themselves, they may send to the Dominion Seed Laboratory at Calgary, or to the Seed Laboratory, Ottawa, according to their location, paying postage on the samples in the former case.

The viability of wheat may be fairly well judged by appearance. The germ of wheat is less easily injured by frost than is the germ of oats, while, contrariwise, the market sample of wheat is much more easily affected than is the market sample of oats. Wheat that looks reasonably plump, and some which looks pretty dark and shrunken, is likely to germinate a good percentage, providing it has been properly harvested and stored. It is good practice to test all seed grain, but especially important to test oats and barley. Barley is susceptible to frost injury both as to sample and germinating percentage. A good-looking sample of barley is not necessarily safe seed. Test before sowing, and get plump, strong-vitality seed if possible. It gives the plants a good start and enables them to overcome setbacks whether of drouth, wet, cold, wind, frost or insect attack.

Of field roots we find turnips the only class meriting much consideration. They are the easiest to grow, give decidedly the largest yields, and need not be harvested until towards the middle of October. Sometimes they would be all right until early November, but it is extremely inadvisable to leave them thus. Last year we had a severe cold snap in mid-October which spoiled for keeping all roots not lifted in advance of it. Beet roots not only fail to yield as well as turnips for us, but they are susceptible to frosts that sometimes occur in September. In 1915 I had mangels spoiled by an unusual dip of weather about the tenth or twelfth of that month. Thus danger necessitates early harvesting to ensure against loss of the crop. Because of their protruding crowns, mangels are more risky than carrots or sugar beets. Speaking generally, we find that field roots call for more hand labor than it is profitable for us to devote to the production of forage. By the majority of us a few turnips must be made to fill the bill. (I hope no cheese-maker reads this paragraph.)

Of garden crops, potatoes stand first, of course. For Northern districts, choose a precocious variety like Early Rose, and plant the bulk of the crop fairly early to allow sufficient time for the tubers to mature. As a second string to the bow, a few rows may be planted later, lest the first planting might sometime be ruined by a June or July frost.

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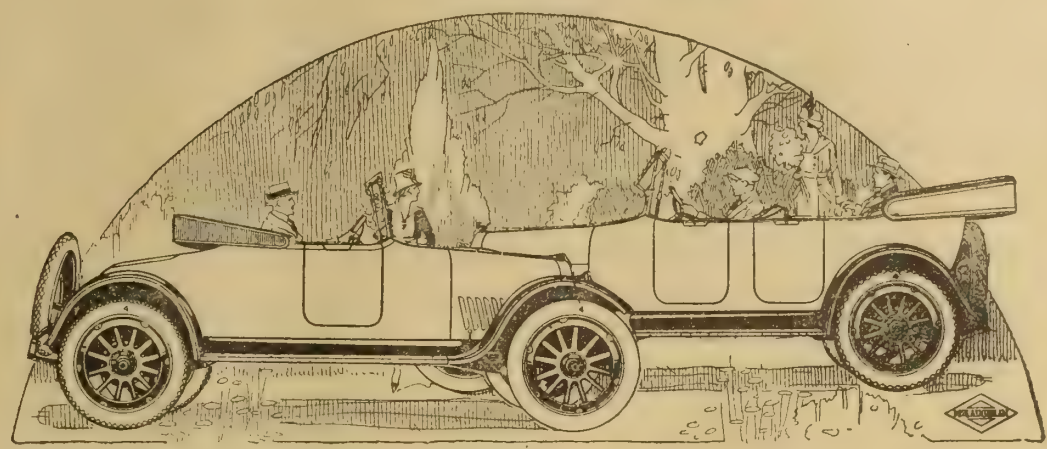

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Giving the Veteran Settlers a Square Deal

By W. D. ALBRIGHT

ARE we giving our soldier-settlers a square deal? We surely have meant to do so. Intentions of the Governments have been liberal and I have no doubt whatever that those responsible for the administration of the intentions believed they were planning adequately for the individuals who elected to engage in farming. But good intentions sometimes fall short of their aim and I am afraid they have done so in this case.

A system of assistance has been devised which involves the loading up of the men with heavy debt and interest charges from which, I fear, many of them will find unexpected difficulty in clearing themselves. It looks easy on paper but practical experience has a knack of trumping up losses and setbacks not figured in the prospectus. Pay day comes and the wherewithal does not always come with it.

Farming, and especially pioneering, is a job that demands a high degree of thrift. Abundant capital is not necessary. Very often those who commence with the largest share succeed in dissipating it, while those who start on a very frugal scale acquire a habit of saving and thrift which enables them to add one implement after another, one animal after another and one convenience after another until, eventually, they find themselves fairly well equipped with an outfit that they know how they have gained and how to take care of. They are not handicapped by heavy annual interest charges or a wet blanket of capital indebtedness. If they lose, they do not sink into a quagmire of debt. They merely slip back a notch but buck up for a fresh start and so on. In the new community where I live I have had the opportunity to observe many examples.

The plungers generally lose out, while the biggest eventual success is usually achieved by those who start small and practice well the cardinal principle of thrift, the first point of which is to avoid debts that there are no definite means in sight to meet promptly when due. Air-castle building is fatal. Realities are stern.

But the soldiers are to be assisted with expert Government supervision! Listens good, but expert supervision will not always prevent horses dying in the beginning of spring seeding, cattle eating wild parsnip or frost destroying crops. The caprice of nature and the capability of the individual will cut a much larger figure than Government supervision, no matter how expert.

With all the working capital it is proposed to loan the men, one very important point has been overlooked. What are they to live on while they are developing their properties? I was speaking of this point the other day to one who has taken advantage of the loan plan to get started again on a homestead he had left in a fairly-well improved condition. His case is not at all comparable to that of those who must go into the bush and build "from the ground up." Yet he admitted that never since coming to Grande Prairie had he been so hard put to it for a living. He was not a grouch and not a spendthrift. He was one of the most promising candidates to make the scheme succeed, had accepted the Government loan after careful consideration and was buckling to it to make good. Yet he found it necessary to take on a very rough, undesirable job of "brushing" in order to keep soul and body together. Is this fair? Is it appropriate treatment of a veteran? I happen to know that the officials who passed upon his case had endorsed his application for the price of a team but refused him a loan to buy cattle. Yet, situated on low land as he is, cattle are his surest means of producing an income. Particularly would he be advantaged by a milch cow. Bureaucratic supervision has its drawbacks.

I expect there will be men furnished with money to buy teams who might much better have a credit for grubstake. A team is a bill of expense from the day it is obtained, while it is not always needed by the homesteader right on the start. Frequently, he is better off to do some axe work first, cutting logs, building a shack and stable, and clearing land, also digging a well, etc., after which the team would come in all right. In certain cases oxen would be more profitable than horses. Circumstances make each case a problem unto itself.

For my own part, I should prefer, in tackling a homestead, to have my living assured for the first three years rather than to be outfitted with a working equipment that I was bound to keep and pay for. Given the living, I would feel confident of accumulating the rest, whether by hiring out or otherwise.

Of course it is not easy for the Government to devise adequate security for a loan on account of grubstake; nor is it easy to guard against its dissipation by an individual of spendthrift tendencies. We recognize and approve the desire of the Government to avoid such temptations. Also we approve the idea of avoiding an eleemosynary attitude. The whole question is beset with difficulties and I am writing not in any spirit of censorious criticism but rather with a view to contributing from personal knowledge of pioneer problems something suggestive of improvement in present plans.

Men who have risked life and all in the hell of war deserve everything we can do for their real welfare. I like to see as many of the men as possible applying themselves promptly to productive enterprise and acquiring a stake in the land. Men whose productive careers have been interrupted, and many of whose persons have sustained injury, by one, two, three or four year's warfare, during which they have drawn the

The Ontario Swine Breeders at Toronto Recently.

pittance of a dollar-ten a day, surely deserve more than a few hundred dollars discharge pay, plus the questionable accommodation of a supervised, interest-carrying loan that would be liable to bear many a sound-bodied, plodding settler to the ground.

A modification of present plans, introducing a few years' pension allowance to be expended, under reasonable restrictions, on living account, would smooth the path of many a deserving lad. Would it be any more than just?

The men who fought to preserve civilization deserve an acknowledgment that we who remained at home ought never to allow ourselves to forget. Our obligation to them does not cease when they doff the khaki. How is it to be met? What form should our welcome take? I was conversing lately with a South African veteran, a city man originally yet one of the five per cent. who used the scrip issued to secure title to land. He is still farming. Said he:

"You know how it was after the South African war. We were welcomed back and a great fuss made over us. You would meet a friend on the street and it would be, 'Come in and have a drink.' You would leave him and meet another and so on. Many fellows not given to dissipation acquired the drink habit. After a few weeks or a month or a year of this easy-going life you would find a good many of the returned soldiers hanging on to some rag-end job—spoiled for work and citizenship. The welcome is all right but it should not be spun out too long."

"How would it be," I asked, "to distribute the welcome by trying to brighten the boys' lives after they settle down to work, with an occasional reception, a standing welcome in their neighbors' homes and a kindly thoughtfulness calculated to add wholesome pleasure to everyday life?"

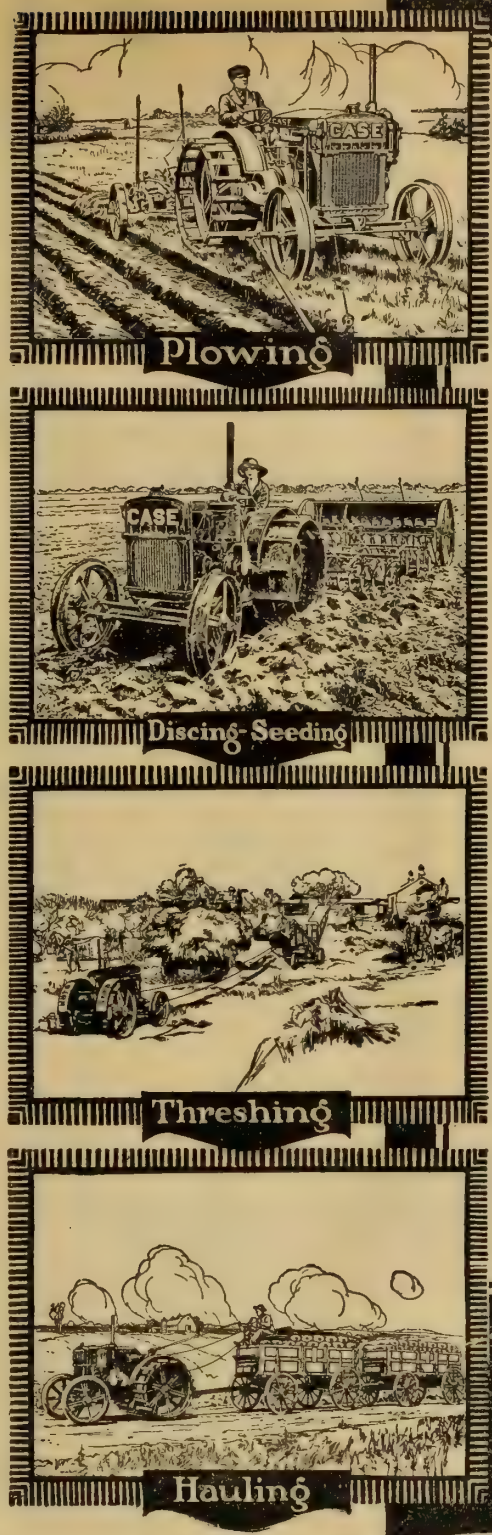
"That's the idea," he responded with enthusiasm, and veterans of the Great War say the same.

YELLOW RUSSIAN OATS

ROBT. Thompson, St. Paul's Ont., entered in the Stratford Agricultural Society field crop competition in which there were twenty-five entries, a field of Yellow Russian oats. He won the first prize, and at the Toronto Exhibition took first prize for the sheaf and first for a two bushel sack of oats. Mr. Thompson says, that the field upon which the Yellow Russians grew, had no special preparation of the soil, but was the heaviest crop of oats he had ever seen grown. The straw stood 5½ feet high, also stood up well and was as bright as gold. The yield was thirty-six large loads of sheaves per acre or 1,050 bushels from 9½ acres.

Jas. Boyd, Markham, departmental judge, who judged the field, gave it ninety-six points out of a possible hundred. This is the biggest score he has given a field of oats in twelve years' experience, and during that time he had judged over one thousand fields.

The Yellow Russian oats first originated on the Guelph Experimental Farm, and in 1908, Robt. McGowan of Scarboro, who secured seed for a field, entered it in the field competition of Scarboro. He took first prize, and the judge said it was the finest field of oats he had ever seen. Mr. McGowan took first prize for the sheaf and a two-bushel sack at the Toronto, Ottawa and Guelph exhibitions. The same year the department took the sheaf and sent it to London, England. He also won with the Yellow Russian, the special prize of $100 given by the Canadian National Exhibition, open to the world, for the best two-bushel sack and sheaf. Mr. McGowan sold his entire crop of fourteen acres of these oats for $1.25 per bushel, when oats were selling on Toronto market for 49 cents.



Why a Case Tractor Is More Profitable

THE number of working days for an advanced tractor like the Case 10-18 is rapidly increasing. Men thought of tractors principally for plowing twenty-six years ago, when we first began to build motor tractors.

In later years, with the introduction of our smaller sizes, men were satisfied with a maximum of 30 days' use per year.

But war-time conditions have brought about changes not only in the mechanical development of tractors, but in their adaptation for multiplied uses.

More Ways to Use Your Tractor

Our latest and best small tractor, the 10-18, is purposely designed for maximum use. It is adaptable for all kinds of work. It represents years of study in the field, dozens of extensive investigations.

The Case 10-18 is small and compact. It weighs little more than a team of horses. Its length is 102 inches, width 56 inches and height 54½ inches. It turns in a 22-foot circle, and can get around easily. It goes through a small gate or door and easily shares the road with other vehicles.

While rated at 10 horsepower on the drawbar, it develops nearly 14. While rated at 18 on the belt, it develops up to 24. This reserve power makes it ever ready for an emergency.

There are dozens of improvements in this Case 10-18. For instance, it has a one-piece main frame, with a four-cylinder engine mounted crosswise. This frame construction affords a dust-proof housing for the rear axle, bull pinion shaft, transmission and the bearings for these parts. It also provides a base for the motor.

This type of construction brings rigidity. It minimizes vibration and prevents disalignment of gears, which are all cut steel and fully enclosed. Thus we multiply strength, reduce weight and conserve power.

Another feature is its economical consumption of kerosene. It has a Case Sylphon Thermostat which controls the cooling system and insures complete combustion of kerosene. And it prevents raw fuel from passing by the pistons and diluting oil in the crank case.

An improved air-washer delivers clean air to the carburetor. No grit nor dust gets into the cylinders to minimize their efficiency and shorten their life.

Our illustrated booklet describes all the advanced ideas in the new Case 10-18.

We will gladly send a copy free. Or it may be obtained of a Case Dealer.

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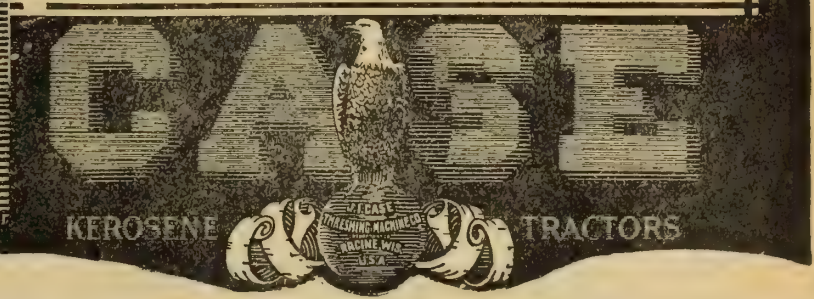

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STAG Chewing Tobacco is appreciated by both of Canada's war units—those who fought in Flanders and those who served at home.

It is also enjoyed by civilians of all classes throughout Canada and is recognized as being

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At the rate of interest paid on War-Savings Stamps your money doubles itself in less than 16 years.

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Minister of Finance.

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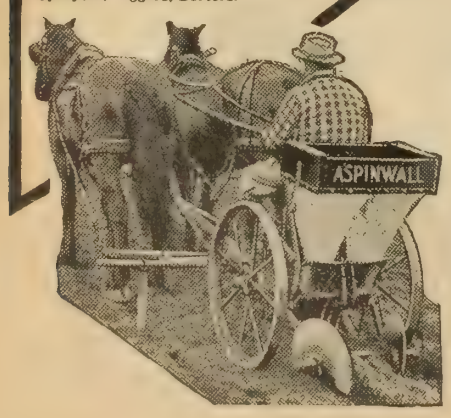

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DOUGLAS' EGYPTIAN LINIMENT

"I have used Douglas' Egyptian Liniment for cattle with Caked Bags or Udders and consider it a marvellous remedy. In 24 hours after applying this Liniment our cows milked freely. No Farmer or Cattleman can afford to be without Egyptian Liniment on his premises." (Signed)
D. W. SHEA,
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This Liniment will also stop bleeding at once and prevent blood poisoning

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DOUGLAS & CO., Manufacturers, NAPANEE

INTRICACIES OF RECONSTRUCTION

By Capt. J. E. Lattimer

CLAMORING about reconstruction is to-day expected like charity to cover a multitude of sins. The word is most frequently used by those who have profited fairly well during the last few abnormal years and who, we have no hesitation in wagering, would be greatly disappointed were any very serious reconstruction brought about. The reconstruction most necessary is a reconstruction of ideas. This result should be peacefully achieved.

Undoubtedly there are a number who hope and expect that, since the removal of the pretext for profiteering they have availed themselves of the past few years, reconstruction may be employed for a time to furnish the same excuse.

There are signs and tokens from many quarters in support of this movement. Many of the most fervent, fluent and forcible agitators for reconstruction advocate the *making* of employment by the various legislative bodies to ensure labor for the unemployed. We suspect that this employment will be paid for by a *reconstructive loan.* Glorious! We can then stave off that *hated* return to *normal* conditions of lower wages and lower prices of necessities of life for perhaps another twelve months.

In the meantime private enterprise will remain as at present, at a comparative standstill. To-day contractors are not anxious to lay one corner-stone. Perhaps this is because everyone is talking reconstruction which is a peculiar coincidence.

Canada's problem of reconstruction is small compared with countries which have profited less by the war. Here it should largely mean the building of homes. Some authority points out that Toronto needs five thousand houses. In many of the smaller cities of the Province of Ontario the need of houses is comparatively as great. Perhaps it is because of this dire need that an association of carpenters, temporarily out of employment, think that the time is opportune to recommend a six-hour day for five days per week. Temporarily that might be beneficial. In some localities it might be advantageous. But this association limits their recommendation neither to time nor place, but with a "sang froid" which really must challenge our admiration, asserts that such an amount of labor would result in sufficient construction for the world. This is another rather striking coincidence.

Ordinarily such recommendations would find their proper place and be noticed in the column assigned to comic cuts. To-day conditions are so abnormal that reports such as the one referred to are treated in some quarters seriously.

It is painfully apparent that no matter how ridiculous a theory one may advance he is to-day sure of a few followers.

The obvious treatment for many of the suggestions advocated should be ridicule as they are many of them too ludicrous to be taken seriously. That treatment not being in all quarters meted out the question is, shall some of these policies be endorsed or repudiated?

Why should labor shrink from a reduction in wages when they know positively that as sure as night follows day a reduction in wages means a reduction in the cost of living?

Everyone is in sympathy with labor in this country. Few countries are as free as this from the class that "toil not neither do they spin." The status of labor in this country is one of our national boasts. The majority of Canadians are workers. The opportunity of crowning a youth of labor with an age of ease is better here than in the majority of the countries of the world.

What we are not in sympathy with is the short-sighted policy of some spokesmen of labor who demand to-day that hours must be shortened and wages must not come down. Such statements emanate from wage-earners who have

taken advantage of the past abnormal condition to reap where they have not sown. They have been able to attain their ends until residents of cities built on coal mines shiver and many people have nowhere to lay their heads.

With private enterprise stagnant the spectre of unemployment appears. The attitude of all or nothing must be combatted. Have we lost sight of the fact that half a loaf is better than no bread? Hasten a reconstruction of ideas.

The problem of reconstruction in this country need not cause such great unrest. Putting off the evil day of reckoning when the piper must be paid shall not however improve conditions. The sooner that a dollar can again approach somewhere near its normal purchasing power the better for the country. Especially will it improve the financial position of those patient and long-suffering people who from choice or compulsion or accident or honesty have not become affluent these last few abnormal years. The people who will benefit by a reduction in the cost of labor and of living form a respectable percentage of our population and they are by no means the least deserving.

With the reduction in the cost of labor and of living private enterprise shall receive a new impetus. Construction of homes will again be resumed and incidentally the unemployed may find an occupation. And more important from a wider viewpoint we may then hold out a greater inducement to immigrants who shall in countless numbers in the future seek our shores.

MARITIME FARMERS FIGURE ON A GOOD YEAR

Continued from page 7

will be fully as much acreage sown to grain as last year, and possibly more, since old cultivated acreas will be seeded down for more hay and this concentrate problem will lead to more raising of cereals. Probably this policy is sound for at least one season, and possibly longer.

We must remember that the Western farmer too is making a strong bid for increase in livestock, one sign that he will strive to hold his concentrates there. In the face of the fact that it has cost $11.00 per ton freight to place feed in the valley this winter from the West, it looks as if the Maritime farmer would have to either raise more grain or make less profit in his cattle than his Western brother. The farm labor problem, of course, is always with us and the present indications are that the price of this commodity will keep up and possibly advance for the coming season. All labor, in spite of the cessation of war activities, is still increasing in price and it is only natural that farm wages will follow in sympathy.

Let This Engine Save Money on Your Farm

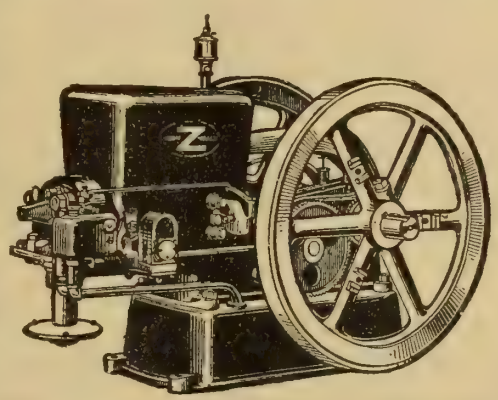
Money saved in labor means greater profits on production. That is the purpose of the "Z" Engine on your farm. It means work done quicker, better and at less cost than by the old methods.

A 6, 3 or 1½ Horse Power

"Z" Engine

does its work day and night at the lowest upkeep cost because of its simplicity of construction and its fuel economy. No matter for what purpose you want power on your farm investigate the "Z" first—the engine that meets the farmer's needs.

Your local dealer can tell you about the "Z". He sells it; he is the direct representative of the manufacturer and he, personally, stands behind each engine he sells to see that the purchaser gets the fullest satisfaction. Ask your dealer or write today to our nearest office.



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It doesn't pay to experiment with unknown Fertilizers. Your soil's fertility is too important. Stick to Gunns "Shur-Gain"—they are known to produce the best selling crops. They are scientifically compounded by our expert chemists who have full knowledge of Canadian field conditions. For any crop—for any soil—we have exactly the Fertilizer you need. You can trust Gunns.

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Prices cannot come down this season. Materials and labor absolutely control them. Delay in ordering can only mean risk in being supplied. You need Gunns "Shur-Gain" this spring. We say write now for discounts, prices and booklet, or see local agent.

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12-24 KEROSENE TRACTOR

MADE IN CANADA by a RELIABLE old Canadian Company after several years close observation and ACTUAL TESTING in every-day practical farm use conditions

In the "Decker" you combine the time-tested and proven best features of several of the most successful tractors of to-day. The steel frame is so constructed that you may change from the high wheel type drive to the "crawler" type "Decker" drive whenever you wish. Traction speed 1½ to 3½ miles per hour. Easily pulls three 14-in. bottoms and handles a 28-in. thresher and biggest silo filler. Quickly responsive, easily operated, automobile type steering gear. Powerful, kerosene motor, 4 cycle motor 4¾-in. bore, 6-in. stroke. Differential housed in oil-tight case with easily-gotten-at sliding pinion when changing over for belt work. When operating under belt work no gears are in operation.

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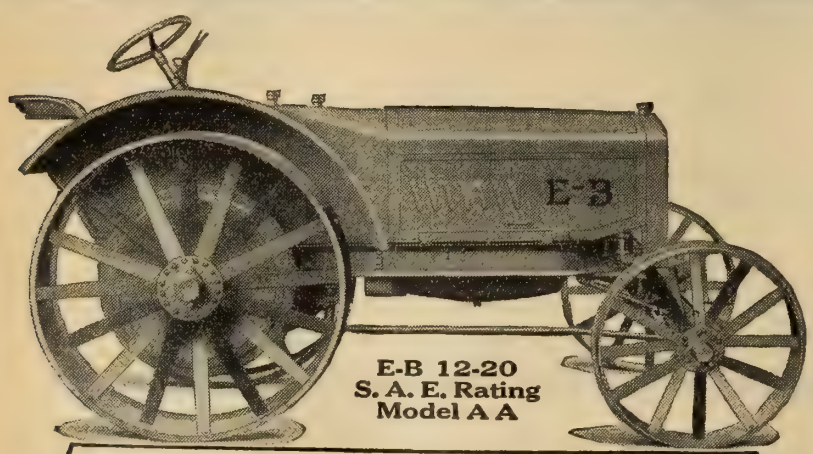

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Get That Surplus Horsepower

RATED by the Society of Automotive Engineers at 12-20 horsepower this E-B Model AA actually delivers 15 horsepower on the drawbar, 25 on the belt.

Emerson-Brantingham are the first to have the courage to rate a tractor on Society of Automotive Engineers' basis. That's the E-B method in everything, giving more than is promised.

The E-B 12-20 Model AA contains all the knowledge and experience of Emerson-Brantingham gained in 66 years of implement building and 12 years of tractor building. Motor, transmission, differential, wheels and frame are of the best material obtainable.

All the equipment, that "makes or breaks" a tractor, is built by the leaders in their respective lines. It is secured for the E-B Model AA regardless of expense.

E-B gears are enclosed and run in oil. The Hyatt roller bearings; Bantam ball thrust bearings; Bennett Air Cleaner; producer type Carburetor; K-W High-Tension Magneto with Impulse Starter; High-Grade Radiator.

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A standard four-wheel tractor. No wheels in the furrow. Front and rear wheels track. See this new E-B model. There's one on your dealer's floor. If not, write us. We'll tell you where you can inspect it.

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EMERSON-BRANTINGHAM THE E-B LINE FARM MACHINERY

FARM ENGINEERING

GAS POWER ON THE FARM

By Charles A. Lukens

IT has been demonstrated beyond question that in most of the classes of farm work which can be accomplished with either hand or mechanical power the use of the latter, notwithstanding the investment and upkeep, is economical. True the result depends to a certain extent upon the scope of a farmer's operations along the lines where mechanical power can be applied, but there are none whose activities are so few or operations so small that they cannot use with economical results gas power in some form especially designed for farm work. And although economy of course makes the strongest appeal, we are of the opinion that one of the most important things accomplished by gas power on the farm is the taking from the farm boy and girl the desire to throw up the job and locate in some city or town.

Gas power in another form has helped wonderfully; indeed, it may have accomplished the desired result without the aid of the other forms. This means the automobile, of course. Where it comes to the farm not equipped with gas power in the other forms which can be used to advantage, the attitude of the average farm boy and girl, who have been casting longing eyes cityward, usually undergoes at least a slight change, and when it comes to the farm already equipped with a gas power for the hard work, the last lingering thought the boy or girl had of going away disappears, as a rule.

TRACTOR REPAIRS

From the *U.S. Farmers' Bulletin*

THE extent of repairs required depends upon (1) the proficiency of the operator and the care he gives the outfit, both when in use and when idle, (2) the conditions under which the outfit is used, (3) the load it is required to pull, and (4) the quality of the machine itself. Many tractors are kept in repair by the manufacturer during the first year's service, excepting for such items as are caused by some fault of the operator. It is not until the second year, therefore, that the owner bears the full expense. Of 86 tractor owners in New York who had used their outfits one season or less (average age 9 months), 31 reported that they had spent nothing for repairs. The others had repair bills varying from a few cents to $100, the average being $17, making the average repairs for the entire group about $11. Comparatively few machines go through their second season without repair charges. The average repairs for 102 New York outfits between the ages of 13 and 24 months (average age 18 months) was $34. For 30 machines between the ages of 25 and 36 months (average age 30 months), the average repairs amounted to $101.

These machines were almost exclusively 2 and 3 plow outfits. The repairs were somewhat heavier for the 3-plow than for the 2-plow machines, but the larger machines also averaged more days' use annually, since they were generally on the larger farms.

The statement is frequently made that a tractor should last indefinitely with proper repairs, since all parts are renewable and the substitution of new parts for worn ones will make the outfit as good as new. With practically all machines there comes a time when so many parts have become worn and need replacing that the cost of repairs is so great as to make it unwise to spend such an amount on an old machine, it being more profitable to discard it and buy a new one. Furthermore, it becomes increasingly difficult to obtain repair parts for any machine as years go by. Not infrequently a manufacturer goes out of business or discontinues the production of a particular machine, thus making it impossible, or at least very expensive, to obtain extra parts. It seldom pays to attempt to use badly worn machines where the farming system provides work for the labor and equipment during most of the working season, since such outfits may cause serious delay and a direct or indirect money loss equal to the cost of a new machine. This is especially true of the tractor.

THE MANY JOBS FOR A SMALL SPRAYER

By W. M. C.

POTATO bugs drive one into the use of a sprayer—thus it was in our case—but what kind and sort of sprayer should we use? We bought a hand air pressure machine with a curved lance. The whole is slung over the shoulder by means of a strap while spraying and the curved lance is wonderfully helpful in getting the spray into difficult places. But there are a host of uses for this small instrument.

From the Department of Agriculture we obtained a spraying chart giving all the necessary directions and formulae that one should use for spraying small fruits, potatoes, cabbages, grapes and so forth. Here our sprayer paid for itself ten times over. We got rid of bugs and had large crops. The curved lance saved many a backache.

From the first we decided to keep our sprayer clean and we thoroughly rinsed it out each time after using. This kept it clean and ready for the next operation.

For washing our automobile we always had used the pail and sponge method which is very unhandy. Now, after the worst of the dirt has been drenched off with water the task is made easy with water under pressure in the sprayer. The curve on the lance makes it easy to clean thoroughly the places that are hard to reach. The sprayer is handy about the auto in still a different way. In cleaning out the differential and transmission put a half gallon or so of kerosene in the sprayer, and under pressure these two parts can be cleaned out as thoroughly as when they left the factory. Then, too, with a little gasoline in the sprayer spray and blow off the accumulated grease on the valves and parts about the engine. Apply oil again and the engine will run like new.

There was a wet bog near the barn yard which was a breeding spot for mosquitoes. All that was necessary to stop them was to put half a gallon of kerosene in the sprayer and thoroughly spray the surface. This done several times while the mosquito season was on was sufficient to hold them in check.

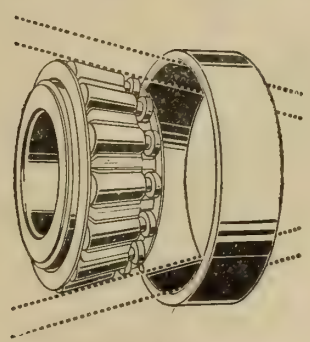
Outside of spraying vegetables and small trees we believe that we received the most benefit from mixing up lice-killing mixtures and disinfectants for spraying the poultry house and nests. It was the handiest thing we could use as we could get the disinfectant into every nook and corner of the house and nests. It is well to spray several times throughout the year. Our poultry house was kept exceptionally clean and we readily noticed an increase in egg production as well as a healthier flock of birds.

HOW BURBANK REMAKES VEGETATION

Continued from page 12

His methods are almost as uncanny as the results he achieved. Possibly the time has come to examine a hundred thousand fruit trees. "In the ordinary course of plant breeding," we are told, "each of these hundred thousand plants would need to be grafted or budded; each would need individual care. It would require at least five years before the final test would come and a showing be made of the value, or the worthlessness of each particular tree. While no such test in a single experiment has ever been made, it may be stated in general terms that to graft and carry through to the end of a five-year period a hundred thousand trees would involve an outlay in actual money, and in rental value of the large area of ground necessary, at least ten dollars a tree—a total of one million dollars."

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

It's in Your Auto
It Ought to be in Your Tractor

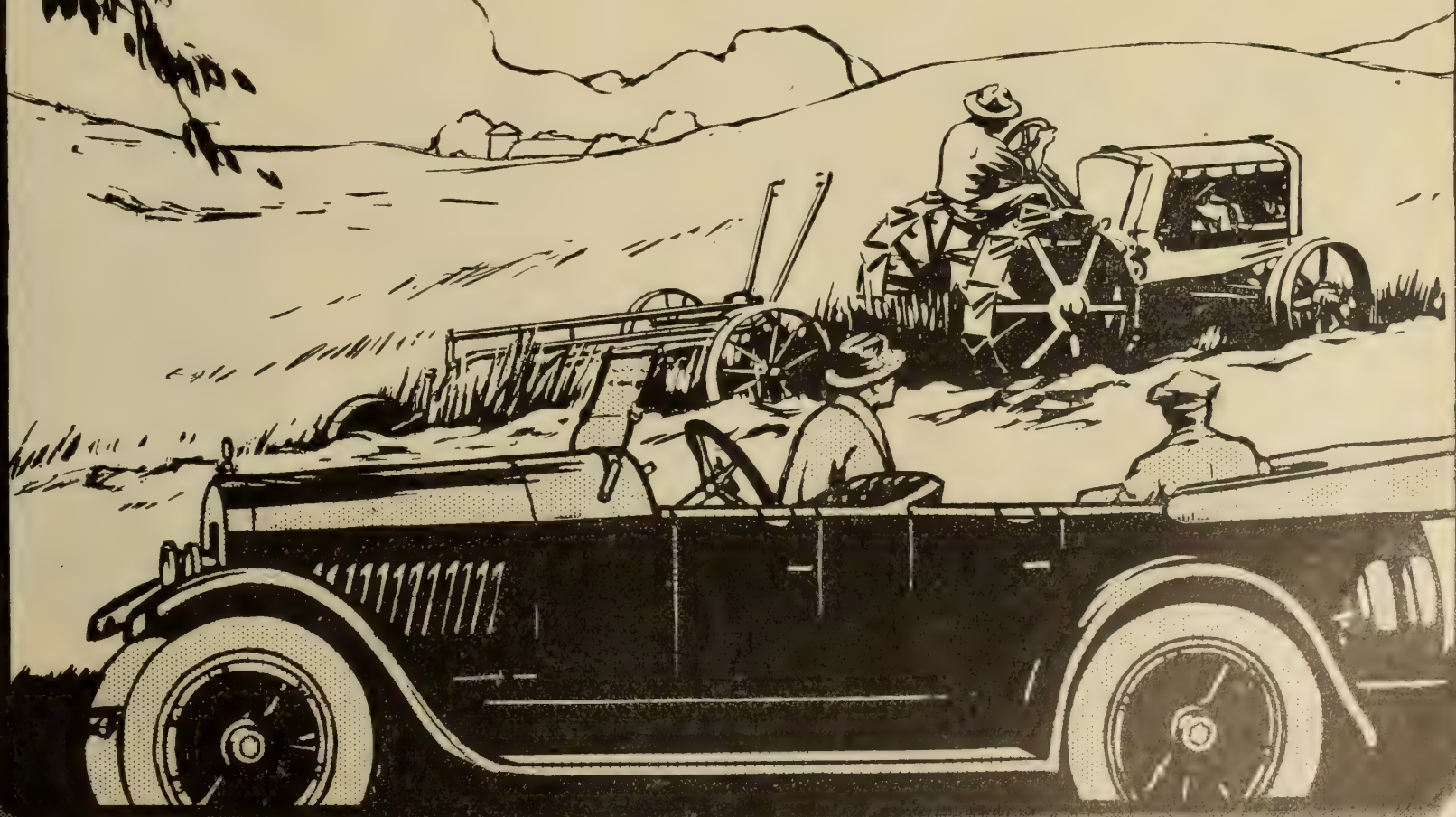
Timken Taper has for years been a principle of motor-car bearings that has enabled them to stand up under the continuous hammer, strain and end thrust that always exists as the car rushes along the road.

The Timken Taper *principle* has been tested out over hundreds of thousands of miles—on all sorts of roads—in nearly every make of passenger car on the market. It has been further proved by tests that only the heaviest trucks could impose.

This same principle of Timken Taper is correct, too, for the tractor. For there is not the slightest difference in the *kind* of load that is put on any bearing by any passenger car, truck or tractor, and there need be no difference in the bearing except as to size and proportions.

More and more tractor builders are realizing that this similarity of service exists, and there's proof of their acceptance of the tapered principle in the rapidly increasing number of Timken equipped tractors. There's more about the principle of Timken Taper in the booklet F-10, "Timken Bearings for Farm Tractors." Write for your copy.

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio



Massey-Harris

For Your Spring Plowing

There are many reasons why you should use a MASSEY-HARRIS PLOW —reasons which it is worth your while to consider, because they mean much to you in the way of making your farming operations yield the best possible returns.

In the first place, owing to their excellent scouring qualities, you can often get on the land and start plowing several days earlier than with other Plows. This is an important matter, especially in the North-West, where a few days' delay may mean the loss of a crop.

The Shape of a Plow is a point which must be carefully considered. MASSEY-HARRIS PLOWS have given satisfaction to three generations in this respect. They turn perfect furrows, putting the ground in the best possible condition for the work which follows.

MASSEY-HARRIS PLOWS are light draft and easy to handle—they are popular with both man and beast.

Durability is a strong point in connection with these Plows—the improved methods of tempering the Steel Mouldboards and Shares, and of hardening Cast Shares, together with careful erecting and rigid inspection of all Plows, combine to produce a line of Plows which look well, work well and wear well.

Walking Plows, Riding Plows, Disc Plows, Engine Gang Plows, etc., in many styles and sizes.

MASSEY-HARRIS CO., LIMITED

Head Offices—Toronto, Ont.

Branches at

Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton. *Transfer Houses*—**Vancouver and Kamloops.**

Agencies Everywhere

Conclusive Proof

can be furnished that the use of good Shorthorn bulls on the farm or on the range increases the size and improves the feeding qualities of the produce of the herd.

A Shorthorn bull is a profitable investment.

Write the Secretary for free publications

Dominion Shorthorn Breeders' Association

W. A. DRYDEN, *President*, Brooklin, Ont. — G. E. DAY, *Secretary*, Box 285, Guelph, Ont.

20

Shorthorns

TRACTOR DON'TS

By Joe Klein

DON'T overload a new tractor, especially the first few days.

Don't neglect loose bearings—it will ruin the engine.

Don't try to start engine unless spark throttle is retarded, or motor will kick back.

Don't fail to strain fuel to prevent clogging pipes and carburetor.

Don't operate a tractor without the air cleaner in proper position and condition.

Don't fail to have plenty of oil in transmission case to allow bevel gear to dip, especially while doing belt work.

Don't fail to keep fan belt tight.

Don't attempt to operate tractors with only two cylinders firing as it will ruin the engine.

Don't operate a tractor with the clutch slipping. Not only is a great deal of power lost, but it will heat the discs and may cause serious trouble to the clutch.

Don't use dirty water in the radiator. Clear rain water is best as it will keep water jacket free from lime.

Don't fill the radiator with cold water while the engine is running or still hot, if the amount in the radiator is low, because a sudden change of temperature in the cooling system is liable to cause the cylinder castings to break.

Don't take any chances of letting the water freeze in cylinder or radiator. Drain them in case of danger of freezing.

Don't operate a tractor unless the water is circulating.

Don't neglect to use good oil and enough of it. It is cheaper than repairs.

Don't see how fast a tractor will run on rough roads.

Don't forget to remove lubricating oil in crank case of motor, after it is useless.

Don't ever race a motor.

Don't shift gears till the clutch is pushed clear out. By remembering this you will reduce the wear and tear on the gears to a great extent.

Don't expect a tractor to give perfect satisfaction without intelligent care.

PROF. W. H. DAY, B.S.A.

PROF. W. H. DAY has resigned from the staff of the Ontario Agricultural College this month to enter the industrial field as Secretary-Treasurer of the Shinn Manufacturing Co., of Guelph. Prof. Day has been well known to the farmers of Ontario, particularly on account of his drainage work. Through his untiring enthusiasm for better farms

in Ontario, he has been largely responsible for the opportunities given to farmers to have a cheap survey of their farms made, and a proper and efficient system of tile drainage installed upon the farms. Certainly for the sake of more production and greater farm revenues there has been no greater movement. And for that reason alone farmers will have a kindly feeling to the late professor. Every success is wished him in his new sphere of influence.

CATALOGUES, BOOKLETS, BULLETINS AND CALENDARS

Several poultry advertisers appear in this issue. Write each one for his price lists.

Livestock men will find it to their advantage to get into FARMERS' MAGAZINE. It is devoting a great deal of space to their interests.

Holstein-Friesians, Do They Pay, is the title of booklets issued by the Holstein Breeders' Association. Write to W. A. Clemons, St. George, Ont., for free copies.

Beatty Bros., of Fergus, have issued a booklet on "How to Get an Extra Pound of Butter From Each Cow," and it is full of interesting stable equipment facts. Send for a copy free to Beatty Bros., Fergus, Ont.

Beans and Sugar Beets is the title of an attractive booklet issued by the John Deere Co. It carries much useful information for farmers growing these crops. Write to John Deere Mfg. Co., Welland, Ont., for a free copy.

The Home Bank of Canada issues a monthly giving some useful hints in home bookkeeping and forms for keeping the accounts. This plan of the household budget can be had by writing to the head office, 8-10 King St. West, Toronto.

Dominion Seeds, London, Ont., issue an attractive booklet on poultry, rabbit, dog and stock supplies. If you want to know where to get the very thing in the poultry business that you require, get a free copy of this book and keep it in your desk.

Armour's Farmers' Almanac is a mighty attractive booklet filled with colored illustrations, for any farmer. It tells about fertilizers, marketing cattle and hogs, lessons for boys' and girls' club work, etc. Write for a free one to Armour Fertilizer Works, Chicago, Ill.

S K F are significant letters and the Canadian S K F Company, 47 King St. West, Toronto, will be glad to send you free their catalog telling all about their ball bearings, automatic drill chucks, ball bearing hangers and pillow blocks. Ask them about anything in ball bearings.

The Concrete Builder, issued by the Portland Cement Association, gives some details of doing cement improvements to the farm. Silos, walks, garages, feeding floors, stable floors, well covers, milk houses, etc. Write for a free copy to the Portland Cement Co., 111 West Washington St., Chicago.

The Sarnia Fence Co. has changed hands and H. Banwell and Wm. Lottridge, of the Banwell-Hoxie Wire Fence Co., Hamilton, and James Playfair, of the Great Lakes Transportation Co., are the new owners of the company. Mr. Lottridge will be manager. Write for their new catalog at Sarnia, Ont.

A Tractor School Text-Book of exceptional merit is issued by the Emerson-Brantingham Co., of Rockford, Ill. The John Goodison Co., of Sarnia, Ont., are their agents and will be glad to send free this valuable booklet on tractors and also another on How I Can Tell, which, as the name suggests, gives you a cue to troubles in your engine bearings.

The Avery Students' note and text book is something new for the benefit of the student or short course attendant at a farm power demonstration. It covers a complete course of study of the gasoline engine and tractors, explaining fully all the "ins" and "outs" of the internal combustion engine. Inquire of the Avery Company of Peoria, Ill., for particulars.

The Percheron Review, issued in January by the Percheron Society of America at Chicago, is full of splendid information about multiple horse hitches and draft horse information that ought to be of service to every big farmer. It is also well illustrated with cuts of Percherons that ought to be attractive to every Percheron lover. Write to Wayne Dinsmore, Union Stock Yards, Chicago, for a copy.

The London Concrete Machinery Co. of London, Canada, have issued catalogue 84 telling all about their contractors' outfits and concrete mixers. Everything in the line of concrete machinery is handled by this firm, who will be glad to answer any questions free. This booklet shows how to make things of concrete that will open up new sources of revenue to the maker. Also in No. 50 they issue a descriptive catalog of their **Novo Engines** which should be read by all farmers and dealers engaged in construction work. Write for free copies to the London Concrete Machinery Co., London, Ont.

You Sit Where You Always Sat On the Seat of the Implement

YOU wouldn't think of riding on the back of one of your horses while at work in order to guide your team. If you did you would require another person to operate the implement, because implements require constant attention.

Then why attempt to operate a tractor in a manner which your experience has proven impractical? It is just as illogical to ride on a tractor in front of the implement and expect to operate the implement from that position as it is to operate the implement from the back of your horse.

Any way you look at it you are working at a disadvantage with the ordinary tractor. To do the best work two operators are required, one on the tractor and one on the implement. In these days of extreme labor shortage this is a tremendous handicap. With the operator on a tractor in front of the implement it is manifestly impossible for him to give the implement attention and make adjustments for varying field conditions without losing time.

Just Like Driving Horses

With the Moline-Universal Tractor you sit on the seat of the implement and have perfect control of both implement and tractor. You are in the best position to observe the work, make adjustments and manipulate both tractor and implement. This holds true regardless of the work being done—plowing, discing, harrowing, planting, cultivating, mowing, harvesting, both grain and corn.

A Time Tried Principle

There is nothing new about this, we simply apply a principle which millions of farmers have demonstrated to be sound. The Moline-Universal gives one man control of greater power than is possible with horses, with the same method of handling and as much versatility. With the Moline-Universal one man can farm more land. It is a six-horse unit—easier to control than one horse and capable of doing the work of from 6 to 8 horses.

Works Day and Night

The One-Man feature is just one of many advantages the Moline-Universal has over other tractors. It is the only tractor which will do all farm work, *including cultivating.* It is the only tractor regularly equipped with self starter and electric lights. Non-robust labor can operate the Moline-Universal successfully, and it can be worked day and night.

No detail has been overlooked to give the new Moline-Universal Model D Tractor positive reliability. The perfected, overhead-valve 4-cylinder engine develops unusual power, and is economical in operation. It is conservatively rated at 9-18 H. P. Oil is forced to crankshaft bearings under 35 lbs. pressure. Gears are steel cut, drop forged, and heat treated. All shafts are splined. Every working part is easy to get at, and every moving part is enclosed.

Valuable Information for You

Our catalog tells how you can operate your farm with less help and expense by using a Moline-Universal Tractor. A post card will bring the catalog to you.

Since 1865 we have been making farm machinery, and now offer a complete line of both tractor and horse drawn implements. Information on any of the Moline implements listed below will be gladly furnished on request.

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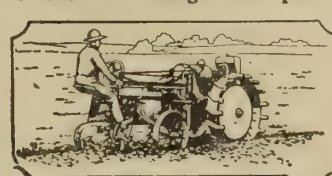
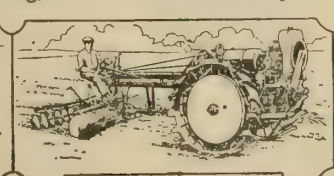
Canadian Distributors:

Willys-Overland, Limited
West Toronto

Manufactured by Moline Plow Co.
Moline, Illinois


PLOWING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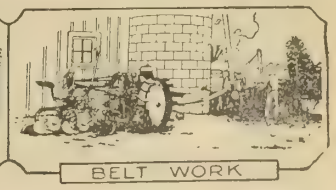

BELT WORK

JOHN DEERE-VAN BRUNT LIME AND FERTILIZER DRILL

ASSURES INCREASED YIELD PER ACRE
CAN YOU AFFORD TO LOSE THIS EXTRA PROFIT ?
WOULD YOU INVEST MONEY AT 6% IF YOU COULD GET 7%
THE VALUE OF COMMERCIAL FERTILIZERS HAS BEEN PROVEN

THE JOHN DEERE-VAN BRUNT LIME AND FERTILIZER SOWER WILL HANDLE ANY KIND OF COMMERCIAL FERTILIZER ON THE MARKET AND WILL SOW IT IN ANY QUANTITY FROM 150 TO 8,000 POUNDS PER ACRE ACCORDING TO BULK AND WEIGHT OF MATERIAL, THE SAME AS ALL OTHER JOHN DEERE IMPLEMENTS. THIS MACHINE MAINTAINS THE SAME STANDARD OF QUALITY AND EFFICIENCY. SEE YOUR NEAREST JOHN DEERE DEALER OR WRITE FOR ILLUSTRATED BOOKLET ON THIS MACHINE, TO US DIRECT—

JOHN DEERE MANUFACTURING CO., LTD. - WELLAND, ONTARIO

ONTARIO WIND ENGINE & PUMP CO. LIMITED

TORONTO

Value Your Time

Big factories don't pay men to do the work machines will do. They make money by using modern machinery and modern methods.

Farmers who make money use modern methods, too. You *shouldn't* use hand-power for work a gasoline engine will do.

Get a Toronto Farm Engine. All those jobs that weary you now will become merely incidents in the day's work. Milking, separating, churning, sawing, grinding, sharpening tools, mixing cement shelling corn, filling your silo—you can do these things quickly and economically.

Toronto Farm Engines are honestly built. Sturdy and simple, they need little attention. Run on gasoline or kerosene.

You can save money, time and trouble by using a Toronto Grain Grinder. Gives you big mill service right on your own farm, at small cost.

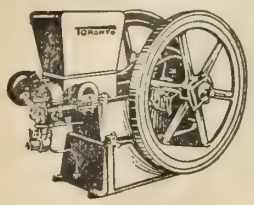
Toronto Saws solve the fuel problem on the farm. Utilize the waste wood on your farm.

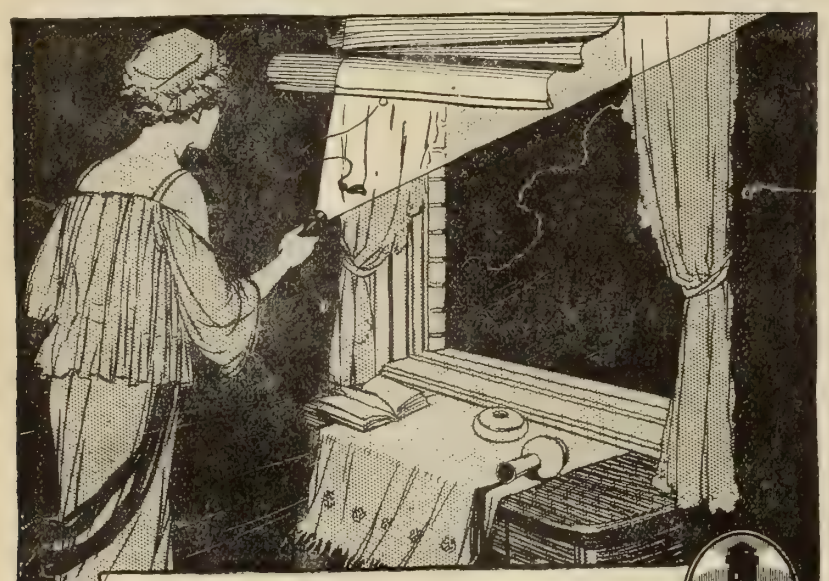
Write for our books on engines, saws and grinders.

ONTARIO WIND ENGINE & PUMP CO., Limited

Atlantic Ave., Toronto

Montreal Winnipeg Regina Calgary





EVERY WOMAN NEEDS THIS LIGHT

Scores of times a Reliable Tubular Flashlight is needed night and day. No more useful article exists for any home. Handy, instant light that can't blow out, explode or set fires. Does away with the danger of lighting matches.

Reliable Tubular Flashlights and Searchlights are made of metal handsomely enamelled in colors. The Reliable line also includes all standard types of fibre and metal flashlights.

Use Reliable Ignition Batteries for your motor car, for your door bell or telephone.

They are "Lively and Lasting."

All Reliable Products are made in Canada. For sale by dealers everywhere.

DOMINION BATTERY COMPANY LIMITED
Toronto, Canada

RELIABLE CANADIAN PRODUCTS

RELIABLE TRADE MARK Canadian Products

"Lively and Lasting"

RURAL MAIL

VARIOUS METAL NEEDS

A. K., Manitoba.—I would ask you to kindly let me know where I can purchase Metallic Lead, Metallic Tin, Metallic Bismuth, Tungstate of Soda, Oil of Sassafras.

Answer.—You will be able to get your lead, tin, and bismuth from the Canada Metal Company, Toronto, Ont. You can buy Tungstate of Soda from the Primos Chemical Company, Primos, Penn. Also you may be able to get your Oil of Sassafras from W. J. Bush & Company, New York; The National Drug Company, Toronto; Lyman Bros., Toronto; or Chas. Cooper & Company, New York.

CREAMERY MACHINERY WANTED

G. E. T., Ontario.—Could you give me any information regarding prices paid for milk used for condensing and the address of firms handling that kind of machinery, also machinery for a butter factory?

Answer.—Machinery for condensing milk is not manufactured in Canada but it is all sent in from the United States. If you will write to W. A. Drummond & Company, 11 Jarvis street, Toronto, you will be able to get definite information where this can be purchased to the best advantage.

Different prices have been paid for milk by local firms at different points, but in a good many cases the price has been as good as the farmers have received on the Toronto market for whole milk. I think W. A. Drummond & Company would handle all machinery you would need for a butter factory. Your proposal ought to be a very good one as the dairy business is bound to be one of the most paying of businesses during the next few years.

BIT UNDER TONGUE

W. H., Ontario.—I have a colt 5 years old and it has a habit of keeping the bridle bit under his tongue, which causes him to have a continual reach with the tongue outside of the mouth.. I would like to break him of this habit.

Answer.—Gleason says that this habit is generally confined to narrow-jawed horses where the space between the molar teeth is too narrow to contain the tongue in the mouth when the bit presses upon it. To remedy this defect take a common bar bit, drill a hole on either side about three-quarters of an inch from the centre of the bit from the upper surface; then take a piece of sole leather, four inches long and two inches wide, sprinkle it over with pulverized rosin and burn it into the leather—thus rendering it proof against saliva; now drill two holes in the centre of the leather corresponding to those in the bit and secure both together by rivets so that the leather extends two inches above the bit and two inches below it. Never drive with a snaffle bit.

BELGIAN HARES

F. B., Quebec.—Where can I buy Belgian hares, pedigreed stock, from reliable dealers?

Answer.—Perhaps some of our readers would be able to inform this reader.

SOY BEANS IN ONTARIO

J. L. H., Ontario.—Would it be possible for me to grow soy beans successfully in this climate?

Where would it be possible for me to obtain seed. How much to the acre?

What price are they worth per bushel?

How much and what kind of fertilizer is best for the working up of the soil before planting?

How should they be cultivated before planting and after?

How should they be planted?

Answer.—Japanese beans, known as soy beans, are grown in a commercial way in the United States but have as yet little introduction into Canada. Tests are still going on in the matter here. They furnish exceedingly rich feed for farm stock and the plants may be cut and converted into silage or may be allowed to ripen. Eight varieties are grown at Guelph. These yield from 10 to 15 bushels of seed per acre. The O.A.C. No. 81 is a yellow variety that seems to give best satisfaction here. You can purchase the seed from the seed houses in Ontario. It may be planted in cultivated rows or when the ground is clean, it may be drilled or broadcast. We would not recommend it as a hay crop in this country. The crop is not very much in favor in this country as yet, being regarded more as a fad. I grew some on my farm last year and cut it green before frost and fed to the sheep. It did not show signs of blooming at all. Price is $13.50 per 100 pounds.—Grasmere.

BUILDING A HEN HOUSE

H. McD., Quebec.—I would be glad to have advice regarding size and material required for a chicken house; to house about thirty hens. I am intending to build a new hen house and would like to build it on up-to-date, sanitary principles.

Answer.—This would be rather a long proposition for us to enter upon to give you the various details and various plans in the FARMERS' MAGAZINE and it would take some issues to complete it. So it might be more to your purpose to get the plans and designs for poultry house work issued by the Central Experimental Farm at Ottawa. I believe they have several bulletins out explaining the situation just as you would like it, and if you will send for them you will get them by return mail. In FARMERS' MAGAZINE from time to time we will have short articles and pictures dealing with the best type of poultry houses, but it would probably be better to your present service to write for these other bulletins.

BOG SPAVINS

W. J. L., Manitoba.—Can your veterinary editor solve the problem of bogs coming on colts the first winter and going away after the horse has his growth. What preparation will be effective in clearing these things off at any time it is applied?

Answer.—Would be inclined to say that your trouble was one of the escape of joint fluid in the colts, which is absorbed later on, and the joint healed over by growth. This is largely hereditary in some animals and we know of no liniment that would be as effective as you suggest.

COW CHOKES ON TURNIP

T. W., Ontario.—I lost a cow a short time ago after feeding turnips, she having choked with a piece. What should I have done at the time to have saved her?

Answer.—It depends on the location of the obstruction. If the turnip were lodged in the pharynx, the oiled arm and hand could have been inserted with the aid of a speculum and the turnip removed. Many cases of obstruction yield to a few ounces of bland oil at frequent intervals and by pulling the gullet on the stretch by forcible extension of the neck. If this is unsuccessful it will be necessary to use a probang and the obstruction slowly pushed down towards the rumen. Some farmers can use a broom handle successfully if great care is taken to avoid lacerating the coatings. In case where the obstruction is in the cervical portion an oper-

ation of cutting through the skin and subcutaneous muscle of the neck onto but not into the Esophagus. The turnip can then be pushed upwards until it can be reached through the mouth. The incision should be long, the whole length if necessary. It can be made to heal rapidly.

PEA FOWL AND GUINEA EGGS

M. J. H., Sask.—Where can I buy pea-fowl eggs and Guinea fowl eggs?

Answer.—Perhaps some readers will be able to answer this. Why not run a Liner ad now in FARMERS' telling our readers where to get the eggs?

WOOL CARDS WANTED

Mrs. H. Y., Quebec.—Where can I get a pair of cards for carding wool at home to save sending the wool to the carding mill?

Answer.—Write to the Canadian Co-operative Wool Growers, 128 Simcoe street, Toronto, for prices.

CURE FOR RINGWORM

By Joseph Burnham

In case of ringworm, I find that by applying tanner's oil with a paint brush freely for three times, it has cured the worst case I ever had. Apply it once every three or four days.

SETS ASIDE A BILLION

THE United States Senate has passed the Administration Bill appropriating one billion dollars to fulfill the Government's guaranteed wheat price for the 1919 crop.

WHAT SHALL THE CANADIAN FARMER DO?

By J. B. Reynolds

President Manitoba Agricultural College.

IN spite of the present appearances in the blockade of Canadian meat supplies, all the facts and the signs point to a permanent profitable trade in livestock products between Canada and Europe. If livestock is to take its due place in the Canadian West breeding must be effected from high-grade sires, especially sires of the cattle breeds most suited to beef and dairy production. On paper, sheep-raising has always seemed a profitable industry, and it is difficult to explain why the industry has declined in Canada. The last two or three years have seen a revival of sheep-raising and the increase ought to continue now that we have a National Wool Association. Hog-raising doubtless will again become subject to uncertain markets, with nevertheless a fair margin of profit for the man who keeps at it year by year.

With stock-raising on the increase there should be increased demands for coarse grains to feed the stock. Wheat-raising is among the uncertainties, and the prospect does not invite large adventures in buying or breaking land, or in purchasing implements to increase wheat production. The normal amount of wheat production will likely be a safe venture.

MANITOBA TURNS TO MIXED FARMING

By George Kay Miller

MANITOBA's dairy situation and returns reveal a remarkable changing to mixed farming in the Red River province. L. A. Gibson's annual figures show that there was an increase of nearly 1,000,000 lbs. of creamery butter, and nearly 6,000.000 lbs. of dairy butter in 1918 over 1917.

During 1918 Manitoba produced 8,450.132 pounds of creamery butter, 9,703,337 pounds of dairy butter and 973,612 pounds of cheese. At an average price of 45 cents per pound the creamery butter output was worth $3,802,559.40. The value of the dairy butter was $3,590,234.69, at an average price of 37 cents per pound.

Unity-Stability-Prosperity

are the aims of the

Canadian Reconstruction Association

Industrial Stability

is essential to

Agricultural Prosperity

Farm and factory are linked in a national economic chain. Without the agricultural West there would be diminished markets for manufactured products, unemployment, and national depression. Without the industrial East prices for farm produce would decline, agriculture could not flourish, and "hard-times" would follow. During the war, agriculture and industry have prospered. During the reconstruction period, it is imperative that there should be no rash change in economic policy. Tariff uncertainty is already retarding the readaption of industry to peace conditions. Any revolutionary change in fiscal policy will produce industrial depression. With industrial depression, there will be diminished markets for agricultural produce, low prices for foodstuffs, and hard times for the farmer.

The Canadian Reconstruction Association urges

A NATIONAL POLICY IN THE NATIONAL INTEREST

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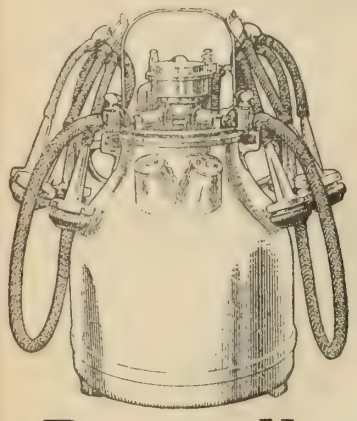
You Pay the Price



When you or yoru help take the time to milk by hand you are paying the price out of your pocket for the extra time taken to milk the cows. *That money* in a surprisingly short time would pay for a Burrell B.L.K. Milker.

When you install a B.L.K. you immediately begin to save two-thirds of the time it takes to milk your cows. It means *one* or even *two* less hired men.

Hundreds of dairymen have installed a B.L.K. to save this extra time and money. Besides, cows are less restive and give more milk when milked with a B.L.K.

Write us to-day for further information and let us show you how easily it is to save time and do cleaner milking with the B.L.K. Milker.

Burrell
(B-L-K)
Milker

Good for the Herd

D. Derbyshire Co., Limited, Brockville, Ont.

Raise More Live Stock
AND
Increase Your Prosperity

This is the opportunity of the farmers of Canada. The depleted herds of Europe insure a profitable market for years to come. The lower the cost of production, the greater your profits. Because of the low cost of the land there is a splendid opportunity in the Prairie Provinces to raise all kinds of live stock most economically.

THE CANADIAN PACIFIC RAILWAY

has thousands of acres of fertile land, suitable for mixed farming and live stock raising, for sale at low prices and on easy terms. Land that will grow grain, and fodder crops of various kinds may be had at from $11 to $30 an acre. Only one-tenth down and twenty years to pay the balance.

READ WHAT H. B. RAMER SAYS:

"As I had no experience in irrigation I felt somewhat blue (in the spring of 1918), as it looked as if I were not going to have anything, and the land not prepared for irrigation. I went to work and got the water on as far as I could, and when I threshed my crop I had 1500 bushels of wheat, 700 bushels of oats and 550 bushels potatoes. At present prices would amount to $4360, which paid my indebtedness and helped me on to another crop.

"We can raise nearly all kinds of garden truck, including watermelons, cantaloupes, tomatoes and sweet corn. Alfalfa can be grown to perfection under irrigation."

Mr. Ramer came to Alberta from Pennsylvania in 1917, settling on a quarter section near Duchess, purchased from the C.P.R.

IRRIGABLE FARM LANDS

capable of producing large crops of wheat and other grains, alfalfa and all kinds of fodders, beets, potatoes, tomatoes, vegetables, every season and supporting maximum number of live stock per acre, for sale at $50 an acre, including water rights. One-tenth cash and twenty years to pay balance. Loan of $2,000 for buildings, fencing, etc., on these lands.

Write now for free booklets containing full information to

ALLAN CAMERON
General Superintendent of Lands, C.P.R.

996 1st St. East
CALGARY

E. LA DUE NORWOOD, C.P.R. Land Agent, Windsor Station, Montreal, Que.

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DAIRYING

Beginning the Dairy Business

By W. H. UNDERWOOD

ALL successful farms are individual in their systems of management usually because the men who have wrought success out of them have been men of enthusiasm, brains and hard work, with an eye clear to see every opening. In almost every instance, chance governed the choice of location and the kind of farming that they followed. Yet they had learned to utilize the full possibilities of their farms and made their work go hand in hand with their laborious days of toil.

Every man to be successful on the farm must have an idea that will work out under his surrounding conditions. "See a want and fill it," is the maxim of commerce. A farmer can ill afford to scatter his forces. He must know his opportunity when it comes to him. He must follow it until he has supplied the wants it furnishes. This is the solution of why some men are successful milk producers, and others are noted growers of swine; why some go into the horse industry, and others into the raising of beef producing cattle.

The old adage, "Be sure you're right, then go ahead," is directly applicable to the case of the man who is going to start into the dairy business on a more or less extensive scale. To get a good start means that success is at least well assured in almost any undertaking, and I shall completely ignore another old saw which suggests anything different about endings under opposite conditions.

In the first place, starting a dairy should be well considered before laying definite plans. The project should be talked over in the family. The wife ought to have a chance to express her opinion, and her ideas may usually be depended on to be not far out of the way on any question of importance. If there are growing boys in the family, it should be talked over with them also, for their assistance will be needed in the care of the cows, the milking and the handling of the dairy products. If there are no boys, is there other help which can be relied upon by hiring, or will the owner have to do most of the work himself?

Is there a shipping station conveniently located, or is there a creamery or cheese factory within a reasonable distance, so that long hauls may be avoided? Are the roads reasonably good between the farm and the place where the milk or cream will have to be hauled? During times of the year, when the roads are bad, this means much to the man who must travel them quite frequently. If there are other dairymen on the route and they combine to hire a man to do the hauling, or take turns in doing it themselves, this means heavier loads to handle—all of which works into the convenience or inconvenience of shipping the products of the dairy.

These things having been favorably passed upon, let us see what suggestions will help the man who is just starting in the dairy industry. He must not forget that upon himself individually rests the responsibility to a very large extent, and his must be the brain to run the business end of it. Moreover, he must be a man with a keen interest in cows; he should be a student of cow nature, and something of a scientist to boot, for the day of scientific farming is here and will not, cannot, be ignored. To attain success he must know, or be willing to learn, how to formulate a balanced ration. He must be familiar with such subjects as deal with carbohydrates and proteid, and know where to find them in the various foods grown upon the farm, as well as in those which are purchased, and how best to combine them as a ration for his animals. Yet to the man of ordinary intelligence there is nothing of a scientific nature connected with the undertaking that need deter him from entering upon it.

The next step is to decide upon the breed of cattle to keep. If he is a poor man financially, buying high priced stock may be out of the question, although, if it can be in anyway managed, the purchase of one or two such animals will prove a good investment. A good way is to buy a young calf or two of the breed selected. These quickly grow to maturity and money also. A chance to get a calf cheaply may sometimes be found through people in town, who keep but one cow for family use. Another way is to buy an aged cow of good breeding, which can usually be gotten cheaply. This plan is not always satisfactory, however, as such cows are apt to be shy breeders. Having tried both plans, I would recommend the purchase of well-bred heifer calves, which may be had at moderate prices, considering their value.

The matter of breed is one worthy of much careful thought. What breed to select depends something upon what disposal is to be made of the milk; also upon the personal preference of the individual. If milk is to be sent to a condensery, the Holstein breed is all right, as these cows give a large volume of milk. For the production of butterfat, or where cream is to be sold, there is no question of the supremacy of the Jersey or the Guernsey. The man who decides upon either of these breeds with which to go into the dairy business will make no mistake, if that is what he wants.

In breeding the cows, the best pure-bred sire obtainable is, of course, the only kind to use. He should be retained in the herd as long as possible. Frequent changes are not to be recommended. Worst of all is the practice of using a Jersey one year, a Holstein the next, with a Shorthorn or Red Poll the third. And one should not try his hand at improving his herd by cross-breeding. Violent crosses are very undesirable. There are enough good animals to be had in any breed, and nothing will be gained by mixing them. It may be thought that by securing a Jersey-Shorthorn cross, or a Jersey-Holstein, that the result would be a larger yield of rich milk, but this is not the case.

The breed selected is the one to stick to, and this should in every case be pronounced, acknowledged dairy breed. It is very important that the cows are tested from the very beginning. The ribbon cows are thus detected and the best producers determined. I would keep no cow that does not show better than a four per cent. test in a butter or cream dairy.

HANDLING THE HEIFER

By WM. WOOD

IT is always well to handle heifers and accustom them to being led around or tied up while they are quite young, that is, before they are bred, otherwise there is the risk that they may become unmanageable and very hard to deal with at calving time. But if previously well trained and carefully handled, this difficulty will seldom or never occur. Many ill-natured or defective habits may be traced to omissions or abuses when the cow was in her heifer stage, and more particularly at the time of bringing her first calf.

Calving time is a turning point with many heifers, as they either become docile or vicious. Both types are to be found in all herds, and the former bene-

fit by consistent attention and are lovable and thrifty. Many heifers are never handled from their calfhood until they are about to calve, or have actually accomplished it. They are not actually wild, but they are far from being tame, and the bringing up of the first calf uncivilizes many. Some are so timid as to become permanently so, while others acquire kicking and resentful habits that cling to them all their days and cause them to be a source of annoyance to the other members of the herd.

If the training of the heifer does not commence when quite young she should always be taken in hand three or four weeks before calving. As she becomes heavy with calf, she has a tendency to be docile, but that is not enough. She ought to be handled and fondled daily. Treat her as near as possible like the other cows. Give her a general rub down, and rub her udder gently as it distends. When she drops her calf she may not be as agreeable to handle as an old cow, but her objections will be only temporary, and the calf will not be more than two days old before she is as quiet and tractable as she was previous to calving. The person who handles the heifer must not be haphazard, for a soothing hand and a kindly word are very important features. A rough hand should never touch her until her good habits are fully clinched, nor after that if it can possibly be helped. Many heifers with their first calf begin to milk very well, and in a short time suddenly decrease in their milk flow. Few, if any, of these are the trained heifers.

All great milk producing cows are quiet animals. They stand chewing the cud from first to last while being milked, and absolutely enjoy the giving of milk. But the nervous animal is unsettled and uncertain. Heifers that are never touched until they calve are all troublesome, and some are terribly so. They often tremble with fear of the person who attends them, or become ill-natured and obstinate. They will hardly recognize their own offspring, they will scarcely allow anybody to milk them, and sometimes the little calf has to struggle to meet its wants. Then the udders of the heifers frequently go wrong and become swollen, hard, inflamed, etc., which is all very much against establishing a good udder and a fine milk producer. Even if the calf nurses the heifer from the first, there will still be the objection to the human hands. Indeed, the more the calf sucks, the less amenable the heifer becomes to having her milk removed by hand, and the submission must all be brought about when she is giving milk, a time with many more risks than previous to calving.

We cannot expect big returns from the heifer with her first calf. Heifers vary astonishingly in that respect, in accordance with age and breeding. They should never give less than half the quantity of milk yielded by a first class milk producer. I would hesitate to breed a heifer again that gives less than 300 gallons of milk during her first year of milk giving. Still I would not condemn a heifer after bringing her first calf, unless sufficient reason exists for doing so. Some heifers do not milk very well during their first year, but pick up surprisingly with the second calf, and it is then that the full value of a heifer can be thoroughly and correctly estimated. A heifer that does not give 500 gallons of milk in a year with her second calf will probably never be more than a moderate milk producer, which kind is not the big money maker.

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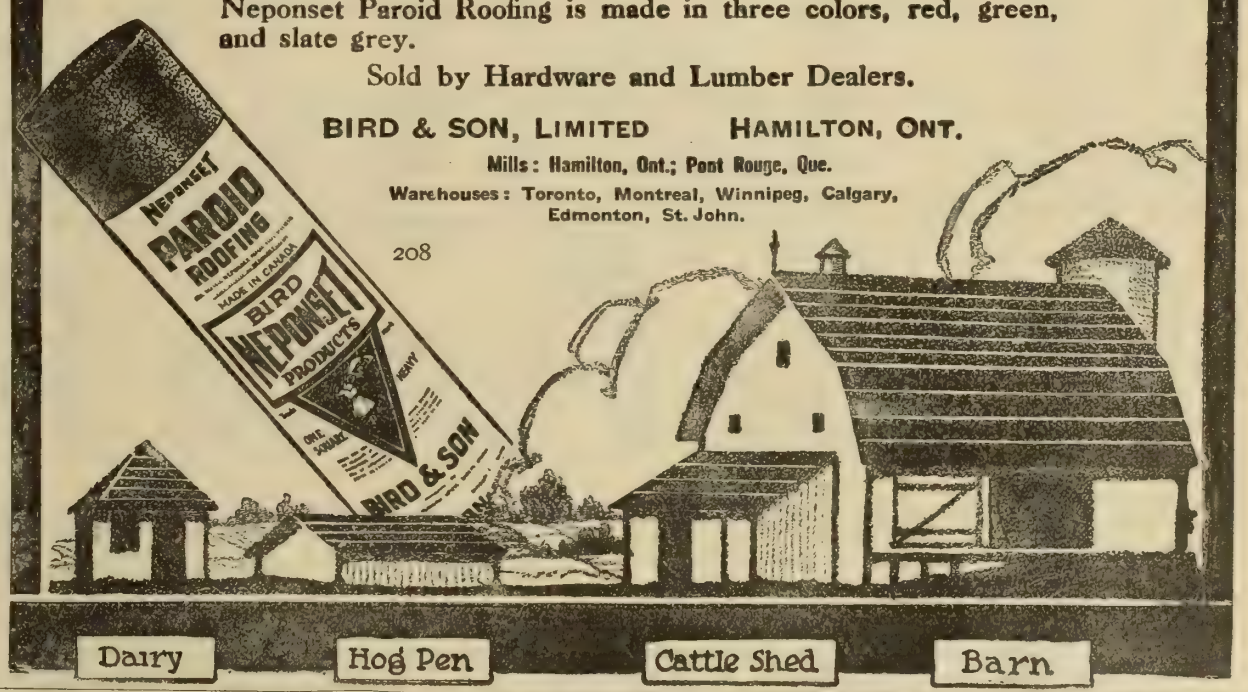

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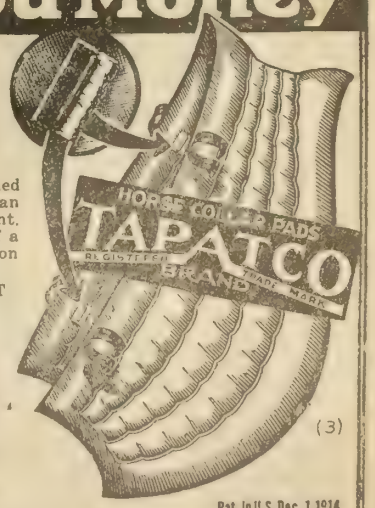

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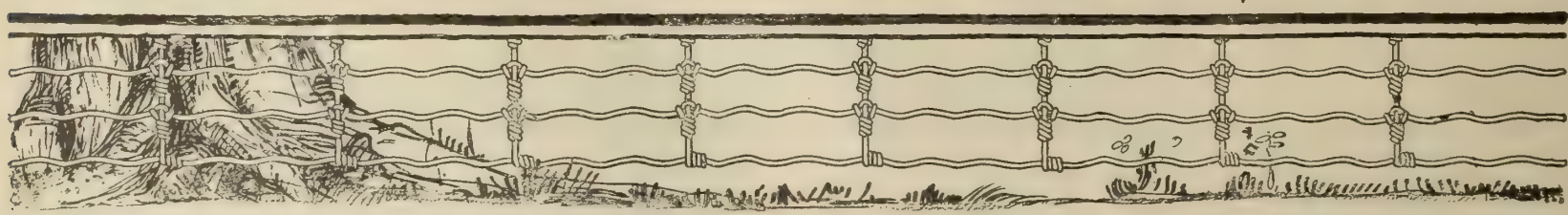

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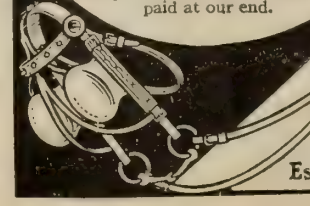

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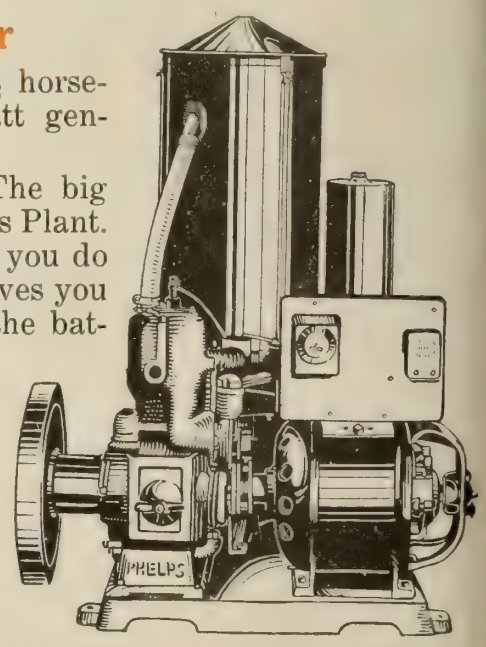

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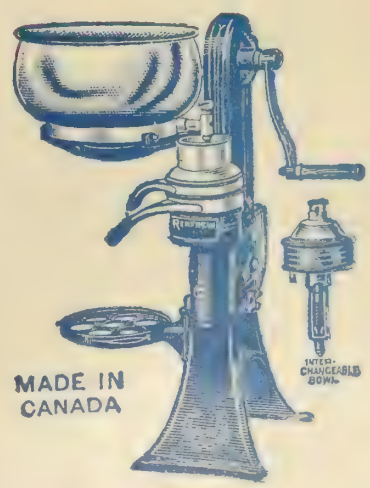

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Other Outstanding Features of April MacLean's

"Imperial Relations Must be Worked Out," by Viscount Bryce. An important announcement on the future construction of the British Empire.

"Reconstruction in Turkey," by Stephen Leacock. A humorous article on the present condition of things in Turkey as seen by Canada's great humorist, and applied to Canadian conditions.

"Bulldog Carney," by W. A. Fraser. A splendid novelette of the Canadian West, complete in this issue. Illustrated by Charles L. Wrenn.

"Opening the New Book," by J. K. Munro. An article on the situation at Ottawa created by the new Liberal leadership—smashing, impartial, fearless.

"The Sun Gazer," by Charles G. D. Roberts. A remarkable animal story. Illustrated by Arthur Heming.

"Canada's Fishmonger General," by Thomas M. Fraser. An article on a young Canadian who put Canadian fish on the diet of the British armies by a series of Barnum and Bailey advertising stunts.

"Bombing the Boche," by Lieut. J. Vernon Mackenzie. The second of the two articles that Mr. Mackenzie has written on the whirlwind campaign of raid reprisals which so frightened all Germany.

"The Transformation," by Frederic S. Isham. Illustrated by Hanson Booth. The second instalment of this sparkling new serial.

"Man and Wife," by C. W. Stephens. Illustrated by R. M. Brinkerhoff. The first instalment of a three-part story of Canadian life by a new Canadian writer—a delightful love story with a background of business intrigue.

Is Prohibition Pendulum Swinging Back?

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The Review of Reviews

The best articles from all publications the world over are selected and condensed for this department. Some of the articles in the April number are:

The Man Behind Bolshevism.
Could German Fleet have been Destroyed?
The Secret Plans of the Allied Command.
Too Much Wilson.
Is the ex-Kaiser Haunted?
Next Government Will be Labor.
New Life of Deposed Princess.
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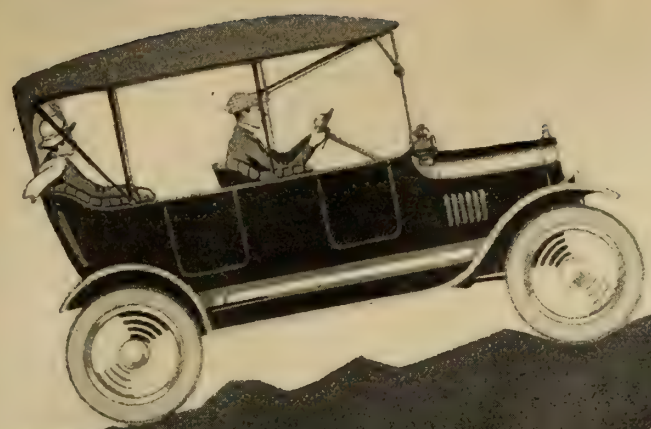

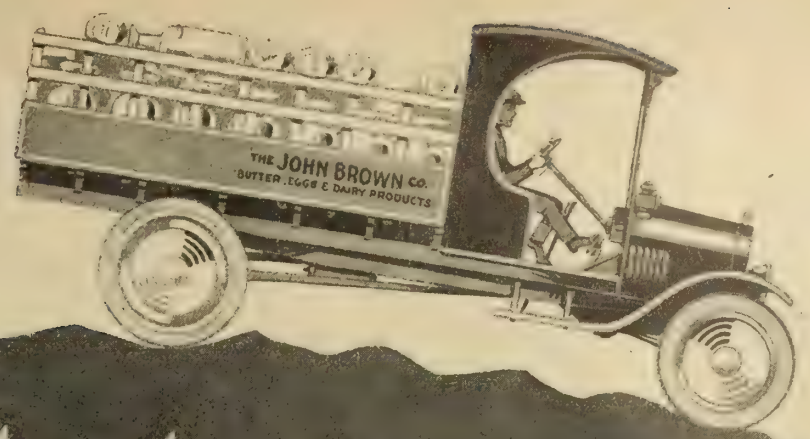

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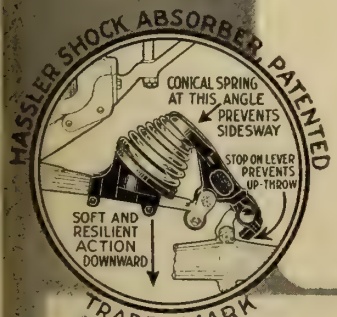

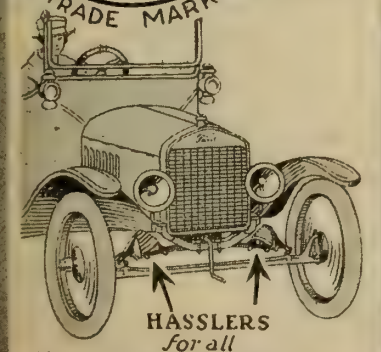

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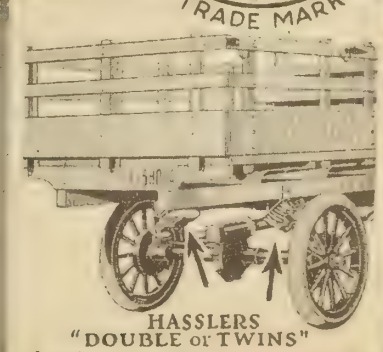

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FARMERS' MAGAZINE

Canada's National Farm Magazine

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ETHEL M. CHAPMAN, *Associate Editor*

An intelligent agricultural policy is the basis of a great industrial policy, and a syst.matic effort must be made to bring people back to the land.—Lloyd George.

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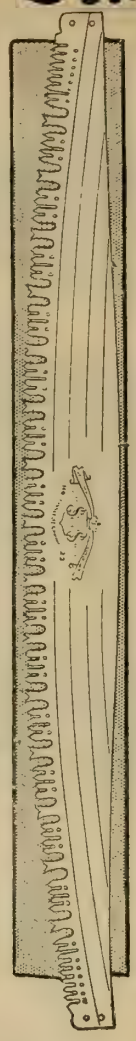

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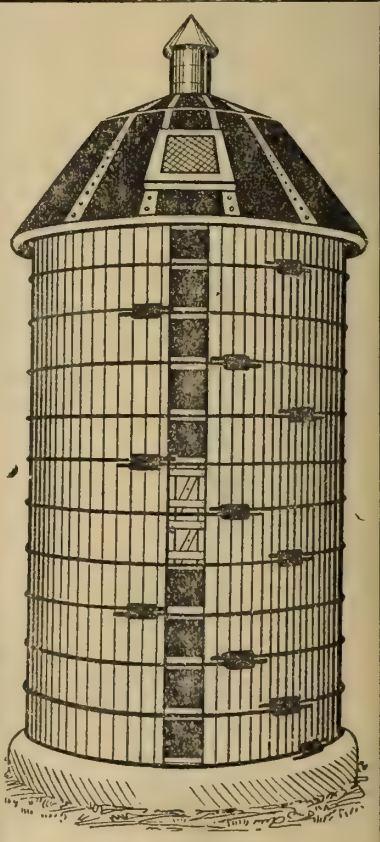

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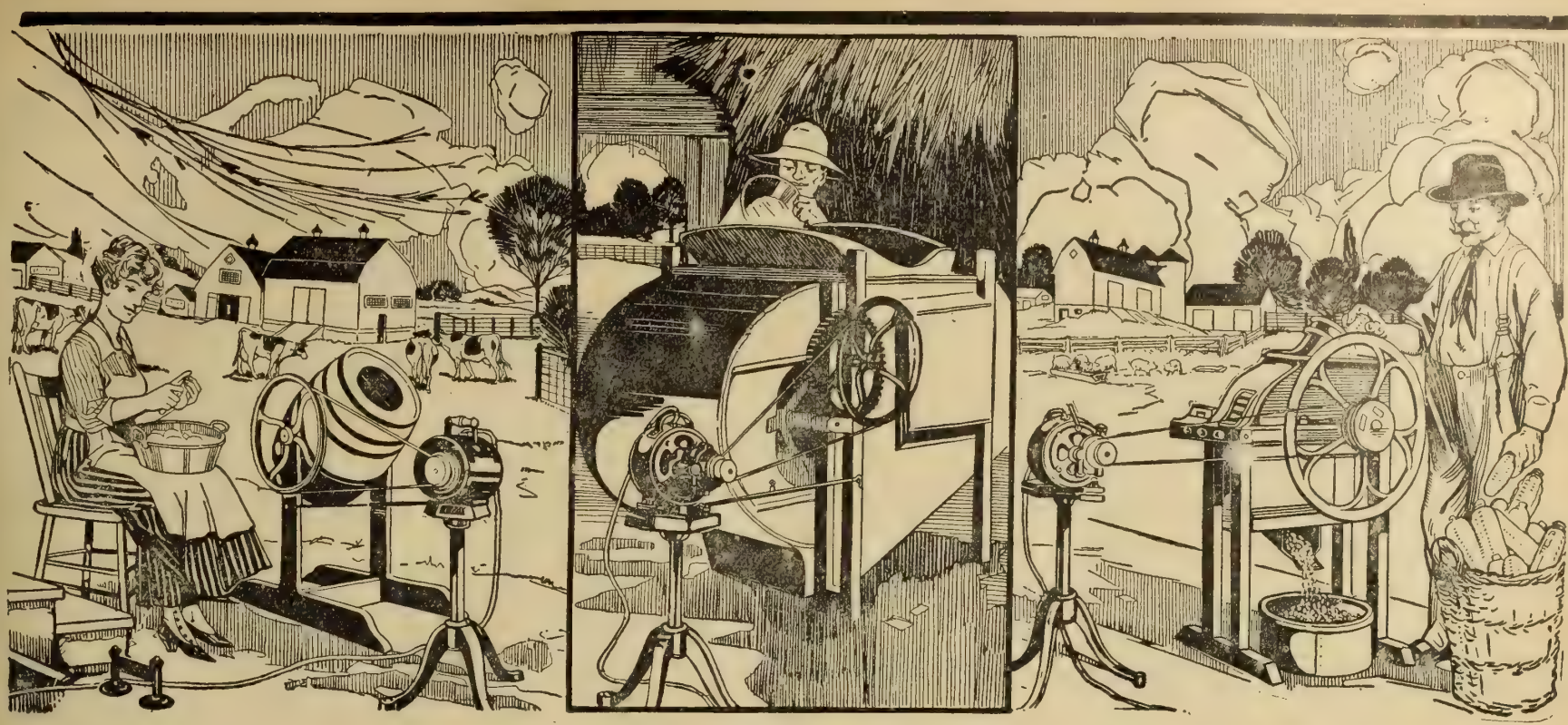

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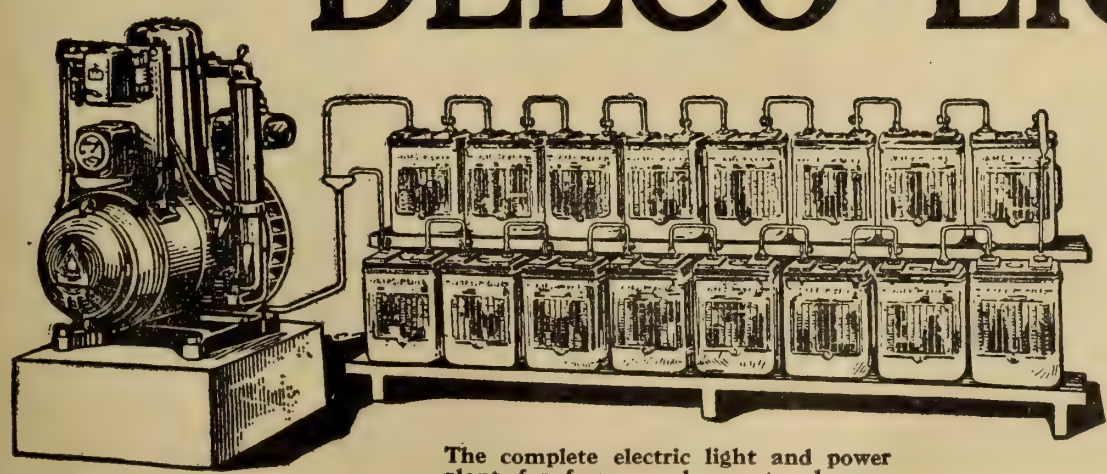

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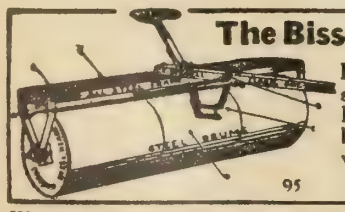

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Investments & Insurance
For the Farmer

The Farmers' Business Outlook

Poor Prospect for Immediate Price Lowering

GENERAL business conditions in Canada might be called, as the farmer often says, fairly good to middling. The uncertainty about tariff changes and the fear everywhere that prices are due for a drop are having a deterrent effect upon the volume of business.

In the grocery trade, the situation seems to be as follows: Retailers generally report good business. They are selling more goods than formerly and yet the manufacturers and wholesalers say that their business is dull. This fact is easily explained. Retailers are looking for price reductions and will only place orders from hand to mouth, so that while they sell at usual profits, and in usual volume, they are loth to stock up with goods that may drop in price to-morrow.

Tea and coffee have increased in price. The tea planters are getting better prices than during the war. This is due to Europe's buying of tea which she did without during the war. Sugar will not come down for some time, for the cane sugar planters have been guaranteed a price on their 1919 crop just like the wheat farmers, and so prices can't fall on sugars for some time.

The only articles that the farmer uses, which have come down, are those used as substitutes during the war, such as beans, corn meal, oat meal, etc.

In the hardware trade, farmers and builders are noting a drop in wire nails and the farmer who contemplates building generally asks the price of wire nails first. The drop in this case though, seems to be due solely to some firm trying to get even at some one else rather than because of the supply market.

Farmers have their minds fixed much at present on the tariff fight that is on. The manufacturers seem to be calling for a continuance of the high tariff, but they know full well that tariff is not so important to them as is the power to combine and control production and prices, and farmers do not want to take too seriously the tariff dust that is being kicked up. Tariff would not make any one particularly rich if all combinations and mergers in restraint of trade were impossible. It is the scheming pooling of interests that is the greater evil. In fact, it looks as if all this tariff trouble was only a red rag to divert attention from the real *casus belli* between the producer and the millionaire. If justice were done, it would not be the high tariff advocate who would go to jail, but some other manipulators not so much in the public eye, and some of them should be there.

Yet there is considerable business activity being curtailed by reason of the tariff uncertainty. We buy a large amount of goods, especially in the building and farm equipment end, from the United States and the prospect of a taking off of the 7½ per cent. war tax keeps back many importers from anything more than a hand to mouth supply—and this is justified. During the last week price declines in many articles in general consumption, in the hardware trade especially, have taken place in the great majority of these articles.

The investment situation shows a healthy state. There is a noticeable improvement in the demand for leading investment stocks says the *Financial Post*, especially in the preferred industrials.

Bond market conditions tend towards quietness although there is no sign of a recession in prices. In fact, sales made recently were higher in price than ever, so that buyers seem to be assured of the strength of their position. Victory bonds have been making some movements upwards. This is one of the notable features of the situation that our Victory bonds are all now higher than they were purchased at, and the farmer who holds these will learn something of the real value of the bonds and of the bond situation in general.

With the new income taxes to be announced, these bonds will likely occupy a stronger position still. Many industrial firms have put their surpluses into these bonds because of their non-taxable character.

Farmers in Ontario are taking much interest in the movements of the United Farmers Co-operative Co., which has just engaged Mr. Loblaw, manager of the Loblaw chain of stores who claims that they will do a three million business this year. Already their livestock business on the Toronto stockyards is assuming amazing proportions. They handled as high as 14 cars in one day last week. The meeting of the Canadian Council of Agriculture at Winnipeg this week of April 1st and the successful start made by New Brunswick farmers into the field is having the effect of consolidating farmers all over the country. There are many important matters to be taken up at the Winnipeg meeting both from a co-operative business standpoint and from a political standpoint. There will likely be a big delegation from Ontario there, many of whom had hoped that this year's meeting would have been held at Toronto, but Saskatchewan apparently objected.

INSURANCE

INSURANCE AND EPIDEMICS

WHY is it that more people are buying life insurance at the present time than ever before in the history of the insurance business in Canada? Why are insurance agents finding it easier to persuade prospects to insure their lives?

Examine this list of flu claims paid by a Canadian life company in February; note the amount of the insurance money handed to the beneficiary, the comparatively small premium paid to the company and the early age of death. None of these policies was in force more than two years. Each policyholder joined as a first-rate risk. Each man had to be persuaded into taking a policy and persuaded to be examined by the doctor. There was no fear of death and the physician gave each applicant the highest physical recommendation—less than two years ago:

Place Insured	Insurance Paid	Premium Paid	Age
Toronto	$5,000	$295.00	36
London	1,000	38.20	18
Calgary	1,000	52.40	24
Calgary	1,000	67.80	31
St. John . ..	1,000	30.60	26
Newfoundland.	1,000	46.75	38
Vancouver ...	1,500	50.85	31
Toronto	5,000	420.00	46
Vancouver . .	2,000	66.50	30
Edmonton . .	2,000	114.60	32
Newfoundland.	2,000	68.60	27

With a table like that before one's eyes—with personal knowledge of the ravages of the "flu"—it is small wonder that the public is literally being "scared" into insuring itself. The gravity of the situation must be taken to heart and wherever there is a man, with wife, family or other dependents relying on him for support, it is little short of criminal if he does not take immediate steps to provide some reserve against possible attacks.

Fail to insure and you may die of worry; insure and you have a powerful ally to help in fighting off disease.

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No. 4330 4 line wires, 33 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 11, 11, 11. Per Rod..... **30c.**

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No. 6300 6 line wires, 30 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod..... **42c.**

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No. 7400 7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod..... **49c.**

No. 7480 7 line wires, 48 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6½, 7½, 9, 10, 10. Per Rod..... **51c.**

No. 8420 8 line wires, 42 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod..... **56c.**

No. 842 8 line wires, 42 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod..... **61c.**

No. 8470 8 line wires, 47 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **58c.**

No. 847 8 line wires, 47 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **63c.**

No. 935 9 line wires, 35 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 5, 5, 6, 6. Per Rod..... **70c.**

No. 948 9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6, 6. Per Rod..... **69c.**

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No. 949 9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **48c.**

No. 1150 11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod..... **54c.**

No. 1448 14 line wires, 48 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 5½, 6. Per Rod..... **64c.**

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No. 1848 18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod..... **80c.**

No. 2060 20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5, 6, 6. Per Rod..... **88c.**

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Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

Length, feet	Height, inches	Price
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3	42	3.30
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10	36	6.75
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The Goodyear Tire & Rubber Co. of Canada, Limited

Neōlin Half Soles

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. APRIL 1, 1919 No. 7

WHAT LED ME TO STUDY WHEAT

By SEAGAR WHEELER, the Wizard of Saskatchewan

One of the writer's stands of grain showing fine promise

The Sage has said that the world will beat a path to your door if you have anything worth while to teach them. Assuredly this adage has been verified in the case of the writer of this article, whose life story is here told in brief. Any man who has the courage to launch out into the deep, with a full and lively belief in his work, will be almost assured of a place in the sun. Seagar Wheeler began alone, the field work of regenerating seed grain, and the number of men who have followed in his steps attests to the real worth of the work. Another article will appear shortly. —Editor.

One of the fields of selected wheat seed

TO TELL of some of my experience in growing wheat and the circumstances that led me to later study wheat, I shall have to go back some thirty-three years. When as a boy I left England to come direct to Moose Jaw and on to Saskatoon, which was at that time a few straggling houses on the east bank of the Saskatchewan River, now known as Nutana, then some 175 miles from the main line of the C.P.R. Born in the shadow of the Undercliff, one of Nature's beauty spots in the Isle of Wight, my early recollections are of the work of gardeners planting trees, shrubs, and gardens, floral and vegetable, transforming the wild plants into gardens and banks. I still have vivid recollections of those things and they left an impression on my mind that has never faded. The lure of the imagination fed by books and pamphlets sent over from Canada with the inducement of a free homestead of 160 acres was responsible for my leaving for Canada. The pages in these pamphlets depicted the homesteader with his team of oxen and plow, breaking up the virgin prairie by the side of a river or lake—the field of waving grain, the winter scene, the ground covered with snow, the log house, the smoke curling up skywards, the settler busy at the saw horse, bucking the stack of winter firewood, etc. Naturally these inducements appealed to me—and the lure of the West was strong.

To the West, to the West, to the land of the free, where rivers of gold run down to the sea—these fancies as I then pictured them were far different to the stern reality, as it proved hard, uphill work for many years. My first homestead was some 18 miles north from Saskatoon, situated on the river bank. Having no capital to work the land and erect buildings, I secured a loan of $200.00, which was charged against the homestead. This money was invested in a team of oxen—a plow—a few bags of flour and some groceries. It was a trip of some 190 miles to reach the homestead, but I was young, and filled with an ardent faith and ambition. I found that this was about all there was to live on.

The nearest settler was hundreds of miles away in one direction, and a few scattered neighbors some miles away in the other. Red Fife wheat was the variety then generally grown. Yields in those days were small as compared with present day yields, but inexperience as to the requirements of the soil as well as the methods in growing the crops on the prairie sod was responsible. Little wonder the returns were poor. We had to put up with the depredations of the wheat birds that arrived in the spring—and the gophers. These small wheat birds came in flocks and to the seed lying on or just beneath the surface of the soil they did considerable damage. They developed a degree of intelligence so much that when grain drills came into use, they would follow the drill row and dig out the seed. For some distance consequently the crop came up patchy and uneven. To overcome this handicap, the seed was sometimes sown broadcast on the surface and then plowed under out of their reach. Only narrow strips could be seeded at one time as it had to be plowed under quickly before the birds could eat it up.

This plan also resulted in uneven ripening of the crop. These circumstances let me to do some serious thinking and planting to meet the situation. I recall making a set of V-shaped runners out of logs and placing several side by side fastened together and hauling this contrivance over the plowing to make corrugations so that when the seed was broadcasted it would fall into the furrows thus made and thus be more easily covered by the harrows. I then hewed a couple of logs to a flat surface and used it as a drag or float, to finish the operation. While this was an improvement it was only a makeshift, but it was a case of anything to get a uniform crop.

Up-to-date Machinery Now

These efforts to grow a satisfactory crop of wheat in those early days were primitive compared to present day methods with all the up-to-date labor-saving machinery, but the lessons were worth while and not lost. They were the best means at hand to raise crops. The pressing need for bare necessities was imperative. We were concerned not so much in making a fortune out of the soil, as this was never thought of in even the wildest of dreams, as we were in making a bare living. It was a problem to keep body and soul together, just a struggle for existence.

The joy of turning into a select field of Saskatchewan oats with a modern binder

Then Frost Often Came Early

The wheat crop was often caught by frost before it was ready to cut, and this naturally reduced the promised returns. No one grew big crops, as they would be a white elephant on one's hand, with no suitable place to store them or facilities to market the grain. To market the crop one had to wait until the Saskatchewan River was frozen over, and sufficient snow had fallen to make a trail on the ice to the nearest point at Saskatoon some 18 miles away. The sleigh was loaded over night, and a start made the next day before daylight, the thermometer often well below zero. We would start down the steep river bank on to the ice on dark mornings, sufficient food to last for a three days' trip, with the noonday meal on the ice. Saskatoon was reached about sundown, the wheat unloaded the next day and the proceeds taken out in trade. Sometimes the wheat realized 35c per bushel and trade was high. The following day the return home. Thus it took three days to market about 35 bushels of wheat.

Early Struggle Fired Me On

It was in the struggle for existence in my earlier experience that a desire to improve conditions was gradually fired on me. When the railway came there were better facilities for growing and marketing a crop, but the first cash I ever received for a crop of grain was when I moved later to Rosthern, some 45 miles north of Saskatoon. Thus the first needs were to find out how to grow a satisfactory crop of wheat. Spring frost, fall frost, rust and drought had to be considered. This led to a desire for earlier maturing varieties that would escape frosts, and led also to much experimenting with the soil—and the seed.

Actuated solely by a desire to make wheat growing profitable, my experiment in the first few years led to some slight improvement and higher yields with more uniform crops assured. Still we had the handicaps of frost and rust. About every two out of three seasons the crops, while good, was caught by frost and this lowered the grade and price and kept the profits down to a minimum. The time I spent on my first farm convinced me that it was impossible to make any headway. There was the loan of $200.00 against the farm—and as little or no cash was realized from the farm—everything

Continued on page 48

STARS AND WARS

By PETER McARTHUR

LAST night when I was coming home from the village a little boy who was riding in the buggy with me suddenly asked:

"Is that Venus?"

He was looking at a great star that hung unwinking in the east. I knew it must be one of the planets but I had to confess that I did not know enough about astronomy to be able to tell him whether it was Venus or not. In the silence that followed I continued looking up at the sky and it suddenly dawned on me that for four years I had hardly looked at the stars. Before the boy had startled me with his question my mind was full of the headlines in the evening papers—The Peace Conference, Canada's wish to be recognized as a nation, and all the rest of it. But as I looked up into the silent heaven memory gave me back a line from Sartor Resartus that seemed appropriate: *"What thinks Boötes of it as he leads his hunting dogs across the zenith in their leash of sidereal fire?"* What indeed! Epictetus—or was it Marcus Aurelius said: "If you are troubled about a matter, sit on a star and consider it?" At least that is the way I remember it.

Anyway the advice is good. Considered from a star somewhere in the constellation Boötes even our great war would not amount to so very much. It wouldn't seem of any more importance than the antics of a few of our microbes would to us if we were able to see them. As I considered the matter, *"in the wide awe and wisdom of the night,"* I felt that we have not been paying enough attention to the stars lately. By thinking of ourselves and our own affairs so much we have become confused and troubled. And yet, how could it be helped? The mother whose son is lying in Flanders can find no solace in the stars. It is perhaps well that we should give much thought to the war—so that we may learn to hate war and end it forever.

ABOUT the most satisfying thought about the war that occurs to me is a quotation from Oscar Wilde. Considering war as it was before the Great War he said: "War will continue until it becomes vulgar." As long as war offered opportunity for glory and advancement to the scions of aristocracy war would continue to be "the lordliest occupation." But when the sons of the butcher and baker and candlestick maker could win as much glory as anyone else, then war would lose its attractions and steps would be taken to make an end of the miserable business. Well, the struggle that is just over certainly made war vulgar in the sense that all its opportunities and glories were open to common men. And it became vulgar even in the accepted meaning of the term. A cavalry officer once said loftily that, *"It is the mission of the cavalry to lend an air of distinction to what would otherwise be a vulgar brawl."* In this war cavalry practically disappeared as a fighting force. The vulgar brawl was conducted in trenches by common men who struggled in mud and dirt and cursed war and everything pertaining to it. And as time passes and the causes of the war come to light its vulgarity becomes more and more pronounced. Germany started it as a war of greed and plunder and unless wise and moderate counsels prevail the victors will have it end in an undignified scramble for territory and power. And yet—perhaps the more undignified it becomes the better. If the world is to be rid of war it must first become thoroughly disgusted with it and with everything pertaining to it. Let the good work of making a muddle of things go on.

I DON'T know why it is, but whenever I read an article or hear talk about the wonder developments we are to see in the business world in the near future I always think of a homely experience of the sugar-bush. A picture flashes into my mind as the proper answer to these dreams of an organized world doing an organized business and becoming buttressed with organized wealth. In the old days when we used to "boil in" in huge kettles, rather than in a sheet-iron pan or up-to-date evaporator, it sometimes happened that when the sap was boiling beautifully a little more heat would suddenly make it foam up, boil over and put out the fire. Before and during the war the kettle of industrial enterprise certainly boiled furiously and beautifully, but I have an uncomfortable feeling that it has boiled over and put out the fire and that we shall be obliged to light up and start all over again. The fierce stimulus of the war and the overpowering need for munitions and supplies enabled men to concentrate the energies of the nation on producing the things that were needed on a scale hitherto undreamed of. But it will not do to suppose that peace enterprises can be prosecuted in the same way. During the war all men had the same purpose in view. To parody one of President Cleveland's great phrases: *"The cohesive power of public danger"* made men stick together as never before. It was much stronger than *"the cohesive power of public plunder"* at which the President marvelled. And now that the war is over it is doubtful if even an opportunity for public plunder will enable men to swing the big things they learned to dream about while doing the big things of the war. We are back on a basis of every man for himself and big wages as well as war experiences have made most men and women have an almost exaggerated opinion of their rights and requirements. It will be hard to organize and hold them together for commercial adventures in which the profit will go to a few men. I am really afraid that during the war the commercial pot boiled over and put out the fire.

IN his speech at the opening of the Peace Conference Lloyd George showed that in spite of the high position he has held during the war, he is still in touch with the common people. In saying that the people of the world are hungering and thirsting to get back to a peace footing, the great Prime Minister gave utterance to a thought that expressed the feeling of humanity. The longing of mankind for the homely things of life can only be compared to hungering and thirsting. The home ties of millions of people have been broken for the past few years and now they want to have a visit with one another. In this connection it strikes me that there may be a danger of being a little too fussy about the work of repatriating our soldiers. It is only right that steps should be taken to see that every soldier has a job to step into as soon as he gets back, but if he wants to rest up and get used to being a civilian again we should give him a chance to do it. We are not in such a hurry to get the business of the world going again that we can't stop long enough to let the boys sit around for a while and tell us about their experiences. It is all right to give every one who wants a job a chance to work as soon as he gets back, but I think it would be much better to have arrangements made to give them jobs a few weeks or a few months after they get back. The letters I get from boys overseas indicate that when they get home they will want to loaf around for a while and get the war out of their systems. I feel that they have a right to this and when they have rested and have told their stories, if the Government is in a position to direct them to good jobs they will rise and call it blessed. But I hope that there will be no delay in demobilizing boys who have homes or friends just because there is no job ready for them. Most of us are willing to have a soldier visit with us for a while whether he is one of our own or not. If all goes well I intend to get a tent next summer and pitch it in a comfortable place so that soldier boys can come and visit with me and recount their Homeric experiences.

I DON'T know how active the censorship is just now or to what extent the letters from the war zone—or peace zone—are censored, but I had the message conveyed to me in a clever way that the boys are homesick for Canada. A letter received a week or so ago concluded with the remark, "By the way, the article you had in —— on Oct. 7th, expresses the feeling of the army, both rank and file." I could not remember what the article was about, but I hunted it up and found that it was an article written at the time when we had our first celebration—a month before the armistice was signed. In this article I had expressed the hope that our soldiers would be brought home immediately and that the work of policing Europe would be left to those whose homes were nearer to the job. I have had my doubts all along that the boys were hankering much for the glory of policing Germany. They have had all the glory and the grime they want. Now they want the open spaces and clean life of Canada.

Soldiers Settling on Inferior Lands

By W. D. ALBRIGHT

IN an article in the first of February issue of FARMERS' MAGAZINE proposing the classification of all vacant lands into (a) farm land, (b) ranching land and (c) timber, park and mineral reserves, the fact was mentioned that soldiers were taking up some land which would not be entertained by old settlers fully acquainted with the districts wherein these inferior quarters were located. It has been replied that the locations chosen by the returned soldiers were subject to inspection and that only good lands were passed. Officially this may be true. Practically, it is not. I know quite a few quarters recently taken up, some of them by soldiers, which if I had a bitter grudge against someone, I should like to place him off under the terms of soldier settlement. Furthermore, I know that inspectors are (of necessity, perhaps) now visiting land on which soldiers are applying to be located and passing opinion upon them as they lie covered with snow. Experienced settlers know perfectly well that even with the advantage of intimate acquaintance with the district, they cannot size up land properly in the winter time. They are especially liable to err in judging the percentage of rock and gravel—a vital point in many cases. Even in the summer it is easy to be deceived, for when the soil is covered with down stuff, long grass and turf mold, all the smaller stones are concealed. The plow finds them, however. If this difficulty applies in summer inspection how much more seriously in winter when ground is frozen and covered with greater or less depth of snow! Some rude awakenings are due, I fear, not only to returned soldiers but to civilians also when they run the breaking plow into their land.

It was to avoid the tragedy of people wasting their lives on unsuitable land and also to utilize the poorer lands economically for the production of timber, fuel and game, that I proposed a comprehensive survey of all unoccupied lands and the withdrawal from settlement of all not well suited to agriculture. A complete system of rural planning, with a broad view to community convenience, would, I am firmly persuaded, be a work of statesmanship of the first order. Sooner or later something of the kind will have to be done. The sooner the easier and the better. The tragedy of Muskoka and Parry Sound should never be repeated.

Tractor Oil is Much Cheaper Than Steel

By A. P. YERKES

THERE is little doubt but that more farm machines are ruined from lack of proper lubrication than from any other one cause. The farm tractor probably suffers more from this sort of abuse than any other machine because lubrication is more essential for its well being than in most other farm machines. Farmers have become so accustomed to operating mowing machines, corn planters, etc., with a little oil and grease on their bearings occasionally without seeing any immediate bad effects from this sort of treatment, that many of them upon purchasing a tractor fall into the same habit of allowing it to operate without proper attention to lubrication.

In the case of the bearings on corn planters, mowers, binders, etc., there is usually very little pressure since there is not a great deal of weight resting on the bearings and in many cases no power is being transmitted through them and where power is transmitted it will not amount to more than one or two horsepower. In the case of the tractor, however, nearly all the bearings are operating under heavy pressures either from the weight of the machine itself or from the large amount of power being transmitted through them.

Where two pieces of metal come in contact with each other only lightly, they can be moved against each other without very rapid wear. The wear will increase tremendously, however, as the pressure increases. The purpose of a lubricant is to afford a thin layer of oil or grease between the two moving pieces of metal so as to keep them from touching each other and offer what is really a liquid surface for the two pieces to slide upon. So long as such a film of oil or grease can be maintained, no wear whatever will occur on the surfaces of the metal since they do not touch each other, and the lubricant will, of course, not cause any wear. But when, because of neglect or a poor lubricating system the two metal parts come in direct contact, a certain amount of wear takes place, which is small or great, depending upon the materials used in the bearing and the pressure upon it.

See That Tractor Has Oil Cups

Most tractors are furnished with suitable means for properly lubricating all moving parts. However, in choosing a tractor, this is one point to which considerable attention should be given in order to assure oneself that the designers of the machine have not overlooked this vital matter.

One of the first things a farmer should do after purchasing a tractor is to go over it several times with the oiling instruction chart or instruction book in hand so as to make sure that he is familiar with the location of every part which needs grease or oil. Where grease cups are used they should be filled with clean grease from a can with a lid which will exclude dust and then turned down until the grease begins to come out at the ends of the bearing in all cases where the ends of the bearing can be seen. So long as grease can be kept working out, dust and grit will not be able to get in between the bearing surfaces to cut them. It doesn't pay to attempt to economize in the use of lubricants. As has often been stated, "Grease is cheaper than steel." Too much lubrication cannot possibly do any serious damage but too little is sure to do so. *About the only place around a tractor where too much oil is apt to cause trouble is on the piston* where the excess is apt to work past the rings and into the combustion chamber where it may collect on the spark plug points and so cause the engine to miss, or, more frequently, will form a heavy carbon deposit on the piston, head, valves, and the walls of the combustion chamber as well as on the spark plug, resulting in overheating of the motor, misfiring, and preignition through the carbon deposits becoming heated to incandescence and firing the charge too soon.

The running of the farm car has taught most farmers the value of proper lubricating oils.

Bluish Smoke Shows Too Much Oil

Fortunately, however, when too much oil is being supplied to the pistons, there will always be an indication of this fact by a light bluish smoke from the exhaust. When this occurs, if a force feed oil system is used, the amount of oil being supplied to the pistons should be gradually reduced until only a faint trace of light blue smoke is visible at the exhaust. If the pistons are lubricated by the splash system, the oil level in the crank case should be lowered to attain this result.

In this connection it may be pointed out that when piston rings become worn or stuck in their grooves, they allow more oil to pass by them than when they are properly fitted and in good working condition. It is possible, therefore, to have a smoky exhaust when only the proper amount of oil is reaching the pistons and this point should be kept in mind.

Examine All Grease Cups

With a new tractor it is advisable to examine all grease cups carefully before the tractor is started to make sure that they do not contain any dirt or grit which will be forced into the bearing and to see that the hole through which the grease passes to the bearing is not clogged in any way. There have frequently been cases where through faulty inspection at the factory machines have left the shop with the grease passage clogged so that no lubrication could be forced through to the bearing even when the grease cup was filled and turned down hard. Whenever it is difficult to force the grease into a bearing by means of a grease cup a careful examination should be made to see that this passage is open all the way through to the moving shaft.

Where a tractor is equipped with a mechanical oiler care should be exercised to see that this is supplied with oil at all times and that the force feed is not only working properly but that the pipes do not become clogged. The necessity for using only oil which is free from dirt in a force feed oiling system which employs small pipes or tubes to carry the oil to the various bearings is obvious. The use of a little dirty oil which may clog some of these pipes will soon cause a burned out bearing.

The problem of tractor lubrication in cold weather is slightly different from that at other times of the year as lubricating oil does not flow freely when cold and many kinds of cup grease harden from cold so that they are almost useless.

Where the working parts of the engine itself are lubricated by means of the splash system the oil will quickly become warm enough from splashing against the hot pistons to furnish adequate lubrication. It is advisable when employing this system to wait a few minutes for the oil to warm up before placing the engine under load. Where a force feed oiler is used it is highly advisable to heat some oil and pour it into the lubricator and then turn the hand crank on the lubricator a number of times before starting.

A lighter grease should be used in the grease cups in winter than in summer, and whenever difficulty is encountered in turning the grease cups down in cold weather they should be warmed sufficiently to insure a plentiful supply of grease reaching the bearings.

This is the third of a series of articles on tractor operation by the author who was the superintending expert last year for the United States Government's tractor work. He is now employed by a leading machinery organization to give their clients better service. A closer intimacy between implement makers and farmers will benefit both parties to the deal, as no farmer wishes to repeat a deal with a firm whose interest in him ends when his note is paid, and no real manufacturer thinks for a moment of giving up a helpful service to the buyer even after there is no money to be received for that service. The article on service as it appeared in the March 15th issue of FARMERS' MAGAZINE from this writer, hits the situation on the head. Any farmer who finds that his machinery firm does not back the machine when at work, should let the fact be known. FARMERS' MAGAZINE does not want the advertisements of any firm whose first consideration is not service —Editor.

The students of the I.H.C. Tractor School last winter at Lethbridge, Alberta. These boys know the inside secrets of the internal combustion engine. The more knowledge, the greater service mechanical power gives us.

FARMERS' MAGAZINE

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EDITORIAL communication must carry the correct name and address of the writer. Anonymous articles will not be considered. Matter for publication must be written on one side of the sheet only. We are anxious to receive interesting articles on agricultural subjects that are of practical value to any members of the farm family. Short, pithy articles of value in any departments are of special worth. Photographs of farm scenes, experiments, contrivances, power, and household conveniences, as well as the accepted articles, will be paid for at our usual rates. Contributions for which we pay must not be submitted to other journals after acceptance by us. Rejected matter will be returned if postage is enclosed.

CONTRIBUTORS' names will not be forwarded, as they are considered confidential.

Address—FARMERS' MAGAZINE,
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Vol. XII. APRIL 1, 1919 No. 7

A SHADE TREE MEMORIAL

BE a tree planter. Nature has been and is a generous scatterer of seeds. These sprout and grow in almost all our Canadian soils, but modern farming and livestock intensiveness gives the wild trees very little chance to come to maturity. The old woods of our fathers' times are rapidly passing out, and unless we plant trees, this province will assuredly approach prairie conditions for our sons. We have prevented nature in her generous methods and we must go her one better by using our best brains to make trees grow where we want them.

Every roadside should be lined with our leading deciduous trees, as maples, ashes, elms, poplars or walnuts. The evergreens grow well and make the winter months seem warmer. Perhaps this wholesale departure from the countryside is due in some measure to the uninviting appearance of a dull treeless stretch of road or farm. Not only does the tree add to beauty, but to usefulness in creating values, breaking the sweep of winds, holding snow on our fields and retaining that romantic love of the soil that is so valuable to any country.

Now as May day approaches, plan a tree planting campaign on the old farm in honor of the boys who have come back from the tree-riddled Ardennes. It would be a fine memorial for any township to do, to plant rows of maples along all their leading highways, and a memorial that would ever keep green the memory of our farm heroes.

And let each farmer plant a tree. If you have cut one down plant two more now.

HISTORY REPEATS

OVER one hundred years ago Edmund Burke, the great English statesman, saw in the upset condition of Europe just after the American Revolution and just before France struck for freedom, a force rising that was founded, as the historian Green says, on scorn of the past. It threatens to upset the whole social order. The ordered structure of classes and ranks crumbled before the doctrine of social equality, states were rudely demolished and reconstituted. The church and the nobility were swept away in a night.

Such description might equally as well be written of Russia and the greater part of the Continent to-day. Events are strangely similar to those times. The Bolshevists embody the ideas of those days and yet the world outgrew the troubles and history went on repeating itself. Might we not look for similar years of discontent and disturbance yet without the same fears for civilization? The present turmoil does not yet equal the wild times through which France went when even the President of the Convention in 1792 proclaimed that "all Governments are our enemies, and all peoples our Allies."

THIS OLD TARIFF TANGLE

WE have no particular love for manufacturers as manufacturers. Nor do we enthuse over our introduction to a farmer, because he is a farmer. The fact is, that a man's business does not necessarily stamp the man as a desirable citizen. There are some manufacturers whose broad humanity commands our every respect, just as there are hundreds of farmers in Canada who abound in sane and clear-cut opinions about the national welfare. The products that flow from the toil of these men have probably more to do with one's likes and dislikes. In the one case come forth machinery and goods for apparel, food and protection. From the other, the raw materials for the same satisfactions. If the manufacturer puts out a well-made honest gasoline tractor, he has earned a place in our estimation just as surely as the man on the back fifty or its half-section who dumps a load of No. 1 hard or a well finished steer into the nation's food basket. We believe, though, the farmer is our greatest citizen. And we stand back of him in his best interests and demands.

Most farmers will agree with these sentiments. Honest toil has never any discount, as the old schoolhouse motto taught us. Herein is our national life glorified, that we live together harmoniously. And we do, until the other fellow gets a little selfish and demands favors and undue considerations from the Government for his business interests and that is the great rock on which most farmers' gatherings and manufacturers' associations come to grief.

Farmers claim that the production of raw foodstuffs is the prime business of Canada and that they have to compete against the whole world in the markets for these goods. For that reason there should be no restrictions on their trade, and no blocking of the channels of distribution.

The manufacturers are equally as assertive about the importance of their business. They furnish the home market for the farmers' products so they say. They take the raw materials at hand and remake them into articles of commerce for consumption even by the farmers themselves. So that a circuit of exchange is established between the two classes.

And just here we get into the realm of finance, tariffs, money, exchange and values—economic subjects that have been mystified and beclouded by misleading discussions. But the tariff is the one thing where all interests seem to focus. Manufacturers have usually demanded protective tariffs. Farmers, especially the grain growers, condemn such. Tariffs, say the manufacturers, enable us to stay in business in Canada. Tariffs, say the farmers, enable the few to get rich at the expense of the many. They raise up barriers between producers and consumers that take out of the people's pockets money that should remain there.

Hence theoretically we find most manufacturers lined up on the side of the political party favoring a high tariff, while generally farmers are regarded as favoring the low tariff policy. Practical politics though, produces some cases of queer bred fellows. Red herrings and flags are frequent weapons of side-tracking issues at election times. Both manufacturers and farmers mingle strongly at times.

To us, the question of tariffs occupies too much of our discussion. Tariffs are blamed for iniquities that are always present. Mighty few of us indeed would be willing to have a system of unqualified free trade introduced into our country, unless all countries were equally as well advanced in the science of civilized living as we are. Neither do we favor a high protective tariff that would prevent a reasonable national exchange of products. There must be a middle course that ought to be eminently satisfactory.

To find out that course is the great political question of the day. Shall we have a tariff board whose finding should guide our legislation, or shall we depend upon the advocacy of either side fighting out their own cases on the floors of closured Parliament, with the devil taking the hindmost?

Theoretically there should be no tariffs. Theoretically there should be no inefficiency in business. But practically no country has as yet been able to get along without tariffs. Apparently we must always approach but never reach the goal of a non-tariff directly taxed political arrangement.

As we have said before, the troubles from which our country suffers most are not tariffs but combinations and restraints that grow up under the tariff. No set of men even with a high tariff can become dominant over the rest of the country, if the controlling of the output were not possible.

The fact is we have never had a pure example of free trade. Not even England has furnished that example. When the Corn Laws were repealed by a Conservative Government, it was the farmers who strenuously objected to the move because it opened them up to the competition of the whole world. Likewise the cattle embargo in Great Britain has been maintained against our cattle, not because of a fear of pleuro-pneumonia, but as a protective measure pure and simple. The British manufacturer has favored free trade because it gave his employees cheaper food and allowed his raw materials to come in free, so that he could compete against the world. W. C. Good, a leading farmer and economist of Ontario, says that protection worked out to its logical conclusion will overset civilization. In fact, tariffs never can be made logical and uniform. They must swing between the play of self-interests and along large national lines only. Unfortunately, we have been accustomed to paying our taxes indirectly so long that most of us shrink from a practical application of a direct tax. In the recent annual elections of one township in Ontario county last December, the old road system was voted back because otherwise each farm had to pay a few extra direct taxes. Taxes are hated generally. To pay them with our eyes shut, seems to be preferable to most people.

EDITORIAL NOTES

IS IT an all fool's year for Europe?

KEEP up your courage and preach everywhere that good times are here.

CATTLE prices do not look much like tumbling seriously for some time.

BUY now what you really need and make it earn its salt while the earning is good.

EVERYBODY likes a sporting answer and Hon. T. A. Crerar's courage was admired.

IF THE women can get better living conditions on the farms, their duty lies before them.

SOW pure seed grain. Prepare to cultivate a good seed bed and treat for smut if possible.

HOW about the twelve points in rural education talked of before the Wentworth Farmers' Club?

IT WILL take a long while to rehabilitate Lord Beaverbrook in the farmers' eyes. Cement sets.

FARM labor is as difficult as ever to secure. All real farm boys overseas should have been here by this time.

THE tractor has come to stay, just as the old tin lizzie set the pace that now seems like a regular old time 2.40 trot.

THE retailer and all local tradesmen, along with farmers, are not making the profits. The question then is to find the millionaires?

THE FINANCIAL POST has had the courage to tell its friends, the manufacturers, where a spring house-cleaning could begin.

BLUENOSES may enjoy the by-play of politics, but it will take more than ginger groups to pilot next year's farm output to the best advantage.

AS yet, we have had no replies to the query, are the retired farmers just chumps? Perhaps these fellows are sick of hired men getting all the cream.

WESTERN cattle feeders are restless under the recent U.S. embargo against their cattle. What will happen when our wheat wants seaboard outlet next fall?

GREEN says that the abolition of the corn laws in England was done against the wishes of the farmers. English farmers were apparently not free traders.

HOW would it be for our farmers to demand a service-at-cost operation of their farms, with its governmental backing of any price increase necessary to pay it?

THE farmers' clubs all over Ontario bear a rustling in the mulberry trees! One secretary writes in to say that he never saw so hungry a bunch—hungry for information. A mighty healthy hunger.

WHEN the farm organizations get so powerful that they can tell each farm just how much to produce and penalize it if it exceeds the output, then there will be some reason for calling farmers Bolsheviks.

HOW would it do to make a Union Government out of the Canadian Council of Agriculture and the Canadian Manufacturers' Association? Cockshutt, Drury, Morrison, Parsons, *et al* would give us a real movie thrill.

The MONEY VALUE *of* PEDIGREE

By W. H. UNDERWOOD

A typical well-bred Guernsey heifer in milk

SOME one has said that the more we know about a thing the more certainly we value it and that we are only careless in our estimate of things which we do not understand. It is a noticeable fact that the man who attaches the least value to pedigree is the one who knows the least about its true use. Pedigree is only of value when it establishes some fact that is worth while. The object of recording a pure-bred animal is not as so many people seem to think merely to establish its purity of blood, but to make it easy to determine whether or not the animal represents a desirable line of blood.

There are registered scrubs in all breeds so far as individual merit goes and it is the man who does not make proper use of the pedigree of his animals who puts them there. To such a man the pedigree proves nothing but blood purity. The individual animal proves the skill of the feeder who has it in charge. Whether this feed bin intelligence will be reproduced in future generations depends to a very great extent upon the generations that have resulted in the animal in question and the pedigree alone tells that.

An intelligent reader of pedigrees will for instance learn of a cow that is specially pleasing to the eye, that he comes from a line of ancestors none of which ever accomplished much and he promptly decides to let her alone. Another cow that he looks at may be somewhat lacking in form or condition or even in production at the pail through lack of skill in its owner, he sees from her pedigree that she has an unbroken line of good producers back of her and he pays for her a good round price. He isn't foolish as the neighbors say he is. He hasn't paid a big price for a pedigree, but he has made use of the pedigree in determining what that cow as an actual producer is likely to be worth to him.

Laying aside for the time being all consideration of an animal's individual merit the first and greatest value of pedigree lies in the history it transcribes of past achievement from which to reckon future probabilities. The pedigree student far from being the impractical "fancy breeder" a good many people picture him is the man who first of all is controlled by the stern hard facts of past achievement and who does not permit himself to mistake the skill of a good caretaker for that of a good animal.

A fine individual though always an attraction to any breeder may nevertheless be largely an accident, the product of good feeding rather than good breeding and the merit may stop with the individual or it may even be wholly "in the eye," sometimes it may continue. But the chances are against it. The continuation of the result of an accident, a freak or of feeding skill cannot be depended on as a breeding principle. The descendants are more than likely to revert, at least in part to the characteristics of a well established ancestry be it good or bad.

Pedigree does not create value, it determines value by making available the records of the past ancestry. A cow with ten generations of good milkers back of her is far more reliable in the practical dairy than one whose dam milked well, but about which the records farther back are silent. The cow's mother may have been a freak in the line and the rest of the line worthless at the pail. The student of pedigree knows this and lets such a cow alone.

The man who knows nothing of pedigree values pays a good price for her because her owner is skilled enough to have her looking well and the buyer gets soaked. Which of these two men then is the practical common sense dairyman, the pedigree student or the one who guesses it off by his eyes? Pedigree itself, that is the pedigree papers, does not fix any special breeding value for the future generations. It tells what sort of merit the individuals of past generations have fixed.

Individual merit ought certainly to be striven for as well as pedigree merit, still where but the first exists it is well to study the question. Is this individual merit the result of accident, of specially favorable conditions or of faultless feeding? Is it likely to be transmitted? Often too when considering some animal which shows less individual merit than the pedigree would indicate she ought to show it pays to consider surrounding conditions again. Has the cow failed as a producer of her own account or merely because she has not had a chance

The wise selection of a breeding animal includes not only what the animal is, but what it is likely to produce. And this can be judged far more accurately through a study of what it was produced from, that is for several generations, than in any other way. Transmission in livestock breding is a practical fact else we would be getting Shorthorns from Jerseys and pigs from sheep.

If different kinds of animals breed true each to its own kind, if different breeds each follow out its own established breed characteristics it stands to reason that the characteristics of certain individuals that have come down to us through a long line of similar characteristics will become such a fixed type that we can predict the same trait in future generations as safely as we can depend upon getting "doddies" when we use a pure-bred Angus dam and sire. If this tendency toward fixe types were not so strong livestock breeding would be nothing but a gamble and it would matter very little what sort of parent stock we used. Excepting with the older and more firmly established families it is still to some extent a speculation, but it is a speculation which pedigree study has done and is doing much to reduce to an exact science.

A cow with ten generations of good milkers is far more reliable

When we purchase an animal for the dairy or the breeding herd it possesses no value to us excepting what it represents in butterfat or beef and as it builds for our herd in the future. The first value a good judge of cows can very largely determine by visible signs, the value to the herd must be wholly determined by pedigree.

Individual merit should not be discredited just because it should not be regarded as the sole deciding point. Sometimes a really fine cow and first class breeder has arisen from sources that would hardly seem to justify great expectations. A few of the leading family types have had such a beginning. Such an animal may turn out specially profitable if her owner has the skill and time and money and patience to develop her and work out this line, if he can afford to wait for years before the characteristics he is working for have become fixed enough to be depended upon, if he is willing to risk the disappointment of reversion after a promising generation or two, back to the inferior class in which his efforts had a beginning. For the average man in average circumstances, however, these costly experiments are disagreeable and it is far more satisfactory to him to make the most of something already developed beyond the stage of great uncertainty.

It frequently happens that a well developed herd has been carried forward along certain lines at the expense neglected while building up some other point. The time comes when the true herd builder wishes to remove this minor weakness and establish as nearly a perfect herd as he can. His first attention very properly is to the bull. He seeks some sire that is particularly strong at the point where his own herd is weak. Here again the outward form while indicative is not proof positive, the results are far more certain to be satisfying if there is evidence that the bull comes from a line that has all been strong at this point. That is, is far more certain to transmit the desired feature if he comes from a long line of ancestors all of which have been strong in transmitting it.

In some respects the use of pedigree here is even more important than in the one previously given because it means so much to the future of a valuable herd that has already been established. The question of introducing a new sire into an old herd is a very serious matter. A mistake may mean the undoing of almost the work of a lifetime and the occasion is one from which the element of chance should be removed by every means that is possible. Certainly no one can afford to introduce into a well established herd any sire that has not been fully tested individually or that cannot possess the very best pedigree assurances.

I know of a very great sire that possessed at least one striking individual defect that he neither inherited nor transmitted. His pedigree was a better certificate of his wonderful breeding value than was his form though he was continually in the hands of a skilled caretaker. There is many an individual droop and fault that begins and stops with an individual.

To get practical value out of a pedigree requires more than a record that the animals are pure-bred. It requires knowledge and intelligence in the man. To know that a cow is "all Jersey" is not so important as to know whether the best Jersey characteristics are family fixed in her.

A BUILDING NUMBER

OUR *annual building number showing a farm house plan with details of construction, installation of heating and lighting and water equipment will appear on April 15th. Other articles deal with barn building, poultry houses, farm layouts, and cement work. Silo builders will be interested in an article by George Kay Miller on this subject for Manitoba where the silo is coming in fast.*

Snow scenes this winter on Maple Dale farm, Pickering, Ont. The apple tree is not necessarily a snow apple

Getting out the morning edition

Some Sidelights On Our Parliament

By T. M. FRASER

Ottawa correspondent of Farmers' Magazine

A FRENCH paper, *L'Action Catholique*, of Quebec, is urging French-speaking members in the House of Commons not to let a session of the House pass without a speech in French. It adds that, "a group of French-Canadian workers would very soon command the attention of Parliament if the members would take care to speak in their own tongue." That is not what happens at present. Some of the most eloquent speeches in the House are delivered in the French language. It was noted in this correspondence two weeks ago that Hon. Rodolphe Lemieux's oration on Sir Wilfrid Laurier was easily the finest utterance of the many delivered on that subject. Since that time the greatest English orator in the House, Michael Clarke of Red Deer, has spoken on the same subject; and for beauty of imagery and choice of language, it would be hard to choose between the two speeches.

But when a member rises to address the House in French, this is what usually happens: there is at once a regular stampede for the corridors on the part of English members on the opposite side of the House; a few of the English members on his own side remain at first out of courtesy, and make a pained effort to look as though they understood what the speaker was saying; but they give themselves away when they come in about a half a lap behind with the applause or laughter started by those who understand the language. Courtesy, too, keeps some members of the Government in their seats; but they usually devote the time to the study of newspapers or write letters. In the press gallery no one remains save the representatives of the French papers.

On the other hand, what do we find among the French? Three of the best speeches delivered this session were by Messrs. Lapointe, Lucien Cannon and Archambeault, and they all spoke in English; not perfect in accent, it is true; but wonderfully fine in choice of phraseology, and with a greater range of vocabulary than the average English member of the House enjoys. The majority of the French members of the press gallery are perfectly bi-lingual.

The object of *L'Action Catholique*, and other enthusiasts for the claims of French nationalism, would be to force English Canadians to understand the French tongue. If this could be accomplished by this species of passive resistance or any other method, it would be a very fine and advantageous thing. It is not to the credit of those who are commonly called educated Canadians that so few of them have had even a reading acquaintance with the French language. It *is* greatly to the credit of Sir Robert Borden that even at the late date in his life when he became leader of the Conservative party, he set himself to learn French; and acquired a fair degree of familiarity with it. I can well remember the delight with which one of his earliest essays to deliver a French address was greeted, when he made a brief speech to a meeting, largely composed of Acadians, in Nova Scotia. They are not scrupulously particular about the Parisian accent down there; and his speech was a great success.

* * *

One of the tragic figures in the House of Commons is Sir Sam Hughes. He seems to be rapidly becoming a sort of political Ishmael, with his hand against all men, and all men united against him. This is on the floor of the House; in the corridors there is apparently no man with more friends. He is forgiven for many "breaks" which would ruin the reputation of many men irretrievably. No stranger combination of ability and reckless imprudence has ever been in Parliament. His rushing away of that first thirty-three thousand men at the beginning of the war was as big a thing in its way as the marshalling of Britain's naval power in the North Sea in the month of July, 1914, by another imprudent but brilliant politician, Winston Churchill.

But General Hughes will persist in running amuck with an idea when he gets it into his head. He has launched forth on a campaign of attack on General Sir Arthur Currie, which appears to be unwarranted, and in which he gets no sympathy from the House or the country. Soldiers in the House, like Colonel Peck, V.C., of Skeena, B.C. one of Canada's most brilliant officers, and Col. Cooper of Vancouver, have defended their commanding officer valiantly and effectively. Their reports of operations which formed the foundation of Sir Sam's charges, and at which they were present, have exploded his utterances so completely as to make him appear utterly ridiculous, and would ordinarily have the effect of completely discrediting any man who made them. But they never phase Sir Sam. In one respect, at least, he is a soldier who never knows when he is beaten.

Sir Sam's present campaign seems to be dictated by one of his outstanding characteristics—and by no no means his worst—that is, his loyalty through thick and thin to his friends. It is in defense of Col. Currie that he has launched this attack on Gen. Currie. The former, as Sir Sam stated in the House, has had his reputation smudged by charges of cowardice on the field. Sir Sam undertakes to clear him by attempting to transfer the onus to General Currie—a wildly conceived idea which is likely to end in Col. Currie praying to be delivered from his friends, if it is pursued any further. Col. Peck, in replying to the innuendoes against General Currie, uttered a warning that if the matter were followed up "some gentlemen would have occasion to curse the day they were born." It is a very unlovely quarrel as it stands.

Another of Sir Sam's infatuations is for the Ross rifle. Here again he takes his stand against practically everyone who has had any practical experience in the matter. Soldiers will arise by the hundred to curse the Ross rifle, and declare its use cost the lives of many Canadians in France; but that does not phase Sir Sam. The British Government, the soldiers, and everyone else who knows anything about the weapon as a soldier's arm, are all wrong; there is a conspiracy on the part of everyone against it. He will defend it to the last trench; and instead of taking his medicine, he spits it out contemptuously, and lets his disease of exaggerated egomania take its course. It is a great pity that a human dynamo like Sir Sam should be totally without a governor, or an "exciter," which I believe is the term electricans use—though in the common use of the word, he is the easiest man to excite in the world.

* * *

Since the House opened, there has been considerable speculation as to the position Hon. W. S. Fielding would assume towards the political parties. He seemed to give an indication of his intentions at the opening of Parliament by moving over from his position of armed neutrality on the cross-benches, to the Opposition side of the House; and he strengthened the impression of being about to throw in his lot with the Opposition when in expressing his intention to take part in the debate on the Address, he handed in his name to the Opposition whip. But neither the Opposition nor the Government could take much comfort to themselves from the address he delivered. It was, by common consent, one of the ablest speeches made in the House in years. This little white-bearded, immaculately dressed statesman from Nova Scotia would always be a most striking figure in any Parliament in the world. Almost without a note, and with never a faltering in his flow of eloquence; always sure of his position and with the experience of forty years of leadership in one Parliament or other back of him, he has such vast store of parliamentary and political knowledge that he is always sure of an attentive audience whenever he speaks. He takes interruptions courteously, but he is seldom interrupted; because he has the reputation in the House of being a bad man to heckle. He comes back quick as a flash to the interruptor, and leaves him wondering what struck him.

So far as the substance of his address is concerned, it may be noted that, although both Government and Opposition forces cheered him in turn, he gave no great satisfaction to either. He proposed to give an independent support to the Government, for the present, on its war measures, and those problems of reconstruction arising out of the war; and he advised the Opposition that this was not the time to attempt to defeat the Government. He rejected the tentative overtures which had been made to lure former Liberals back to the fold, and intimated that he could not agree that the Liberal fold was to be found on the Opposition benches.

One might judge, from his attention to the speeches made, and the stand being taken by other former Liberals now sitting with the Government, that Mr. Fielding was piqued by recent references to the record of the parties in the tariff. More than one of the Western members has intimated, in way of reprisal to criticisms made on their attitude by Opposition speakers, that they were coming to the opinion that they had as much to hope for in the way of tariff reform from one party as from another. He reminded them that he and his fellow members in the Laurier Government had gone down to defeat on the greatest measure of tariff reform ever offered to the Canadian people.

The address was of unusual interest as revealing that Mr. Fielding has lost none of his old-time vigor and ability. He is a figure which will not down, and cannot be ignored by the Liberals, although as a result of Quebec manipulation he was passed over for the leadership on Sir Wilfrid Laurier's death. He gave the Government the most uncomfortable moments it has had this session, while maintaining a very dignified and somewhat remote attitude towards the Opposition as now constituted. The fact that he still expresses an adherence to reciprocity will make it almost impossible for the Western Liberals to do anything else than eventually line up behind him.

* * *

There is unanimity among members representing rural constituencies that Daylight Saving must go; and there is not very much enthusiasm for it on the part of anyone. The East never liked it, and in the West there is so much daylight anyway, with the long twilight which enables work or play to be carried on in summer until between nine and ten o'clock at night, that the need of it is not apparent. The principal demand for it seems to have come not from the workers, but from the players; and the feeling of the country towards this class would seem to be to quote them the words of the rollicking blade who sang: "The way to lengthen your days, dear boys, is to steal a few hours from the night." The one who hates it worst of all is the hired man on the farm. With no union to back him, his hours have *usually been running from sunrise to dark anyway; and instead of sympathizing with efforts to squeeze out a little more daylight, he would prefer some Moses to bring about a plague of darkness.* It may be taken that Daylight Saving will go by the board, or at least be made optional.

* * *

One of the members has put forward a proposed resolution to the effect that a special committee should be appointed during the present session to make a searching inquiry into the staffs in the various Governmental departments, with a view to ascertaining how they can be reduced and rearranged in the interests of efficiency and economy. This touches a question of such magnitude, and pregnant with so much trouble for so many people, that it is almost inconceivable that the committee suggested will be appointed, or that, if it is, any serious and determined attempt will be made to get at the matter which Mr. Steele, who proposed the resolution, is no doubt aiming at.

After a member is here a little while he has it impressed on him that it is not wise to stir up trouble. There is not a vast amount of sympathy for the reformer anywhere, particularly in the early stages of his efforts, before public opinion begins to get back of him. History not infrequently writes down a man as a reformer who, while he is going about his work of reform, feels that he is simply the goat. He is looked on as butting in to secure publicity for himself; and his fellow members not infrequently disparage his efforts.

Nevertheless, this resolution is aimed at a situation which is notorious to anyone who has even a slight acquaintance with affairs at Ottawa. The Civil Service here is badly in need of the expert investigation and advice of some Doctor of Sick Business, who would go into it and apply to its operation those reforms and establish those principles which are recognized as necessary for the successful operation of private or corporation business concerns. Ottawa is dotted with huge buildings housing the staffs of different Government departments, and there is always a cry for more room. It is very much as though a farmer should keep crowding his carriage house and barns with wagons or implements for which he not only had no use, but which were very much in his way; and at the same time be lamenting that he had to put up more buildings to take care of his equipment.

Earnest and efficient heads of departments—and there are many of them here—will frankly say that their work is rendered less efficient by the number of employees in their offices. *It is no exaggeration to say that from three to four thousand employees could be dismissed here, and the work of the country actually be carried on more effectively and expeditiously.* In the matter of stenographers alone, for example, instead of

Continued on page 18

A good road scene in Mariposa Township, Victoria County, Ont. Note the fine effect of the roadside trees. The old worm rail fence adds to its picturesqueness.

A caterpillar tractor engaged in filling a silo on an Illinois farm. Hundreds of tractors are now in operation in Canada, even Quebec has 46.

Photos are wanted for this page. We would prefer scenes taken by farmers or by their sons and daughters of operations of farm machinery on their own places. Pictures of water services, new ideas in buildings, or any farm arrangements that carry interest to all readers would be as welcome. Tell the full story on the back of the photo and mail at once.—EDITOR.

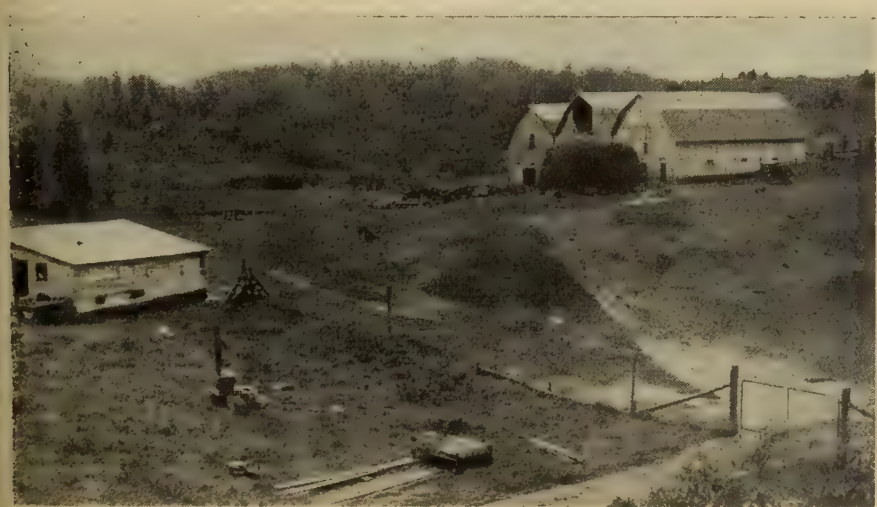
At the 1918 school fair at Devlin, Ont., in the Rainy River district, last year, the flag was raised in honor of the boys who fell overseas.

Up-to-date silo filling outfit

Irish Cobbler potatoes are Canadian favorites now. This field was 100 per cent. free of disease.

The school fairs have contributed a great deal towards awakening livestock enthusiasm in the young folks as well as in the older ones. This was at a Waterloo County school fair 1918.

A modern poultry house erected by George Alcock, three miles north of Kenora. Note the canvas over the windows, which proved satisfactory even in that cold climate.



A sheep ranch in Muskoka, showing the sheep barns and the character of the clover clad hills that sheep like.

A Ford tractor at work drawing a binder on the farm of H. Jenkins of Goderich Township, Ont., last harvest.

BEEF PRODUCERS *of the* FUTURE

By GEORGE K. MILLER

WHAT a great thing it is to be a farm boy today! What opportunities there are for the boy on the farm now as compared with the opportunities his father had. This is true all over the civilized world, but particularly in Canada and United States, where the farm boy is being given his rightful place, and where his future possibilities are becoming realized. Out West—in Manitoba, Saskatchewan and Alberta—it is great to be a farm boy, especially if his father and mother will permit him to enjoy the dozen and one things that are provided for the boys on the farm. First there are the boys' and girls' clubs, hundreds of them organized throughout the country, the same in Ontario, where boys and girls grow vegetables, chickens, calves, colts and pigs and exhibit them at the fall fairs. Then we have the farm boys' camp at some of our larger exhibitions (like Toronto fair) which provides that five boys from each local agricultural society district may come each year and camp in one great body, as guests of the fair board and the Government, and have one rousing week of fun and sight-seeing. This is a great week for the boys.

But possibly the one feature of farm boys' life in the West that is attracting most interest is the calf-feeding contest that several winter fairs in the West have put on. As Brandon winter fair was the first to organize this feature, and has staged its sixth successful calf-show, it may be taken as a basis to illustrate the method of organization and general interest shown. In a week of most interesting livestock events, this calf show stands out prominently as the one central feature of absorbing interest to country and city folk alike.

While Edmonton show, for instance, has opened their calf contest to boys and girls, Brandon has never seen fit to admit any but boys. They must be between the ages of nine and seventeen years and must feed a steer or grade heifer born during the previous year. The boy himself must feed, care for and exhibit his calf, and parents must certify that these conditions have been fulfilled at time of entry. These are practically all the conditions surrounding the competition.

The Angus have thus far beaten the other breeds. Fyfie Knight 2nd is here shown with Judge George Cran and J. G. Tolan, President, American Aberdeen-Angus Breeders' Association

What a time the boys have when they all get their calves assembled at the fair. Occasionally there are little disputes as to who may win but usually there are so many interesting things to take up their attention that they work away to see how completely they can dress their calf for the parades and for the judge. It is a busy week for the boys. At every calf show at Brandon there have been over thirty entries, and this year there were nearly sixty. The big prizes offered brought out a large number of calves. The first prize was $100 cash, second $90, third $80 and so on down until the twenty-fourth boy gets $10 and every boy below that a $5 bill. Then the fair management arranged for an auctioneer to sell at public auction any calves that were for sale, and the butchers, packers and stockyard buyers from Winnipeg bid the calves up to very high prices to encourage the boys and show them that there is real money in feeding good cattle. Many of the boys went home with more money in their pockets than their father had in his, and they are determined to do as well or better next year and go right home to fit up another calf. Even the boys who do not get more than $5 are determined to get right into the big money next year. It is this ambition that is instilled into the boys that makes the contest so valuable for the future.

The parents take a wonderful interest in these calf shows. Every mother and father is anxious that their boy do as well as possible, and with pride they sit at the ringside nodding instructions to the boy as he holds his calf before the judge. The breeders are all interested, as it means a good deal of advertising for the particular breed of calf that wins. In the West this inter-provincial breed competition is very keen. The Angus have thus far got the best of the other breeds, although both Hereford and Shorthorn have won since the events were first staged. The various breed associations put up substantial specials to encourage the feeding of good calves of each breed. The interest is ever widening and the good results spreading.

FARM BOOKKEEPING SIMPLIFIED

By W. D. ALBRIGHT

NEARLY every advocate of farm bookkeeping proceeds on the assumption that the method should be ample and straightway elaborates a plan that not one reader out of three follows clearly and not one in a hundred undertakes to practise. Wonder if I can do as well.

I managed a farm once where a complete double-entry system of bookkeeping was practised. Time cards were filled in by the men showing the exact amount and value of labor devoted to each crop and each class of livestock. Precise information of production costs was thus obtained and for a large, extensively organized farm the system has much to commend it. But for the busy husbandman operating on a one-man scale, with everything under his hand, it is so necessary and is liable to prove too much of a tax upon his time and energy. In bookkeeping as in other matters one should cut his coat according to his cloth.

Our present plan is simple. I won't claim it is easy, for any bookkeeping at all is a trial to me. I drive myself to it from a realization of its importance. When I mentioned to my wife a few minutes ago that I was going to write an article on farm bookkeeping she bantered me with the come-back: "Yes, you know so much about it." But this is a case where I have a chance for the last word and my answer is that it is because I am not much of a bookkeeper that I have devised a system applicable for farmers. Here it is:

First of all is a business diary, or daybook. Every transaction, whether cash or credit, is noted here. It likewise contains a record of all bargains made, arrangements as to changing work, etc. Such a diary prevents many a difference of opinion. In the unfortunate event of a lawsuit it would be invaluable. Odds lie ever with the party who has precise records. Sample diary entries are:

"Sold B. 72 bushels oats for $36.00." "Sent bank $95.00." "Bot. stamps 50c." "Bot. groceries I.E.G. $60.00, Pd." "Paid J. insurance premium $32.95." "Helped W. saw wood (9 hrs.)"

Once a month, theoretically, but practically about once a year, I sit down and post into a ledger such day-book items as require entry—for instance, all items in open accounts with the neighbors. These are annually balanced up and any difference paid or received. Of course they do not all run open for a year, but any not previously settled are adjusted at time of stocktaking. I aim to have very few such accounts. At the moment there is only one and it practically balances.

To find out where the money comes from and where it goes—a more puzzling question with most of us—also to assist in stocktaking by getting down before me the items added to capital account during the preceding twelve months, I take some loose leaf sheets of scribbling paper and write various headings, such as "Living Expenses," "Business Expenses," "Improvements," "Wages Paid," "Interest Paid," "Taxes Paid," "Grain Receipts," "Cattle Receipts," "Cattle Purchased," etc. I then go through the diary from beginning to end, note down the items under their respective heads and cast up the totals.

A very minute inventory is taken on March 1st each year and typewritten in duplicate. The duplicate copy comes in handy the next year for stocktaking, as many of the items remain the same save for a pencilled revision of numbers and values. One copy of the inventory is kept unmarked for purposes of reference. The other after revision and amendment is copied in duplicate and discarded. When one commences to keep books his first inventory is liable to be rather tedious and bothersome, but the second, made with the first before him, will be comparatively easy. It usually surprises one to find how much loose property he has about him. Also it prompts him to get it together and put it to rights. He looks up the tools and grain sacks scattered around the neighborhood, straightens up accounts with neighbors and generally gets a line on his business affairs. Our inventory classifies property under such heads as:

1. Real Estate: (a) Land, (b) Buildings, (c) Fencing.
2. Livestock: (a) Horses, (b) Cattle, (c) Hogs, (d) Poultry.
3. Grain and Crops; itemizing threshed grain, winter grain sown, if any, etc.
4. Implements, Vehicles and Utensils, all itemized in detail.

And so on.

When the foregoing operations are complete, I condense a balance sheet, the main items of which I shall reproduce as they appear on my statement:

ASSETS
- Real Estate
- Livestock
- Grain and Crops
- Implements, Vehicles and Utensils
- Harness
- Miscellaneous
- Stock in Co-operative Co.
- Grubstake on hand
- Bills Receivable
- Furniture and Personal Effects
- Cash on hand
- Total

LIABILITIES
- Bills Payable
- Balance March 1st, 1919
- Last Statement March 1st, 1918
- Increase during year.

From a technical standpoint the above method could be criticized severely but it enables me to know exactly how I stand with each individual, shows the channels of outgo and the main sources of income, keeps tab on all odds and ends of property and reveals our net standing from year to year. There is a great satisfaction in having such information and it well repays one for the trouble taken to prepare it. Knowledge is power as the familiar adage has it, and this applies particularly to the knowledge bookkeeping supplies. It is the sword that pierces illusions and lays open the state and trend of one's business affairs to the cold, clear light of intelligence. In this pitiless glare one finds his bearings and steers the bark of Enterprise to the sure port of Success.

HOW *the* DAWN CAME *to the* HOLLOW

A Story of What Girls Can Do For Girls

By ETHEL M. CHAPMAN

NANCY had spent the entire seventeen years of her life in the Hollow. They hadn't been such terribly cramped or circumscribed years—in fact Nancy had had a rather enviable freedom, for the Hollow was really a rather wide stretch of level fields and low hills and creeks and swamps and pastures, lying between two lines of mountains, where the snow stayed late in the spring and the sumachs cropping out in patches on the rocky sides flamed early in the autumn. Nor did the mountains entirely shut off the valley farm lands from the rest of the world, for a railway burrowed through at each side and a train daily took its leisurely way across; and all summer the smoke-wraiths from passing steamers some miles out on the lake at the south told something of the world's trafficking. Altogether, it was not far short of Wordsworth's ideal spot for a girl to grow up.

But Nancy didn't see it as an unalloyed blessing. The discontent, half divine, half human, stirring naturally in the heart of an ambitious, large-souled girl, who is almost a woman, kept growing until she had firmly convinced herself that she must get away from the Hollow. She was the daughter of an ambitious strain whose young men explored and studied and went far, and she was the youngest of a family of girls who had married young and happily, or at least contentedly, and settled down on well-to-do farms here and there in the Hollow. Nancy had no desire for any kind of "settling down." When she married there would be no "settling"; it would be an uncompromising "going up"—not, perhaps, materially, but spiritually, aesthetically, as is the dream of all idealists.

At present there was no sign of wings on her horizon. She was tied down to earth, irrevocably, by two things—a herd of thrifty, but unaristocratic cows, and one certain Cherry in particular, whose habit of loitering in secret places made her the object of some person's special escort twice a day when the herd were brought home for milking. The other attachment was a little city of bee-hives in the orchard, where no one else could safely venture. Nancy loved the bees as she loved all living things, even the refractory Cherry. She worked among them on sunny mornings without veil or gloves, or trepidation of spirit, as they buzzed above the shining gold of her hair, which might have been spun from yellow honey itself and lit on the ruffled white of her collar to assure themselves that this was not some variety of blossom petals with a possible fount of sweetness hidden away somewhere. Yet with all this happy heritage of being born for her environment, Nancy wasn't satisfied.

IT came out startlingly one spring evening. Cherry had been unusually trying, being unresponsive to calls until the shadows grew deep among the cedars, and when at last she was discovered, having stopped in the centre of a safe area of bog to browse contentedly at the tender, budding saplings, while Nancy waited at the edge of the pool. Cherry had made up for part of the wasted time on the balance of the way home. Nancy milked, shut in the chickens and came into the house, where the lamp was lighted and a brisk wood fire burned with its usual cheerfulness. Her father had come in just ahead of her and was saying to her mother:

"I'm afraid Nancy's about discouraged with that cow. Think we'd better get rid of her."

"I'm afraid there's something else troubling Nancy," her mother answered. "What with the cows and the bees she's pretty much tied." Then seeing that Nancy had come in and heard she finished: "We were just saying you ought to have a visit away or something."

And Nancy turned red, looked away and announced resolutely:

"I don't think a visit away would be much use—I don't think I could come back. I don't want to drive cows all my life."

"We could send you to college next fall," her father ventured, rather timidly. "We'd be pretty lonesome, but we could manage for one year."

"It wouldn't be any use," she argued tenaciously. "It would just be to come back to it all. I suppose there must be something wrong with me. The other girls don't seem to mind it, but they're married; they wanted to stay. I guess I just wasn't made for the country, that's all. There must be other things I can do besides driving cows."

And she went up to her room to take off her draggled garments. It was what she sometimes called "a darling of a room." Her mother had told her to have it fixed up just as she wanted it, and it had white paper with little blue stripes, and white muslin curtains with borders of little blue flowers, and there were light colored rag rugs on the painted floor and a cedar chest that had been her grandmother's, and from the polished stove pipe there issued a stream of grateful warmth. It was purely a girl's sanctum, fresh and sweet and virginal enough to have delighted a Priscilla of the Mayflower, and in its security and warmth and comfort, after she had cried a little, partly because she was sorry, Nancy had something of a change of heart. She stood in the darkness in her nightgown before the open window and looked up at the stars above the jagged white mountain peaks and down at the mist over the swamp, and she heard the mountain torrents rushing down to the lake as they had done every spring since she could remember. After all, the Hollow was dear to her, but what was ahead?

Cherry's habit of loitering in secret places made her the object of some person's special escort twice a day.

Downstairs her father and mother were asking the same question. It wasn't that they wanted to keep her at home just for themselves. They wanted her to be happy—to have the best life could give her of everything. If she went away—well, even though they had lived all their lives in the Hollow, they knew that about the best the city had to offer a girl untrained to its work and its ways was a meagre existence, starved of the real things every girl should have. If she stayed in the Hollow, what was there for her but the cows and the bees and the housework, day after day, with the church service on Sundays? That the neighborhood was dull there was no denying; most of the boys had left, even the girls didn't see much of each other. Maybe Nancy was just lonesome. They would keep the college course in view and perhaps the crisis could be staved off for some time.

THE crisis came in an unexpected way. It was the custom for the Sunday School to appoint a delegate to the annual convention in the city. This year they appointed Nancy. She attended the sessions conscientiously and took notes minutely until a young woman—just a girl she was—with a new subject, came to the platform. After that Nancy just looked and listened. The girl had a live message for girls. She showed how the social and national life of the country depended to a surprising degree on its young women, and why they should be trained for leadership, developed personally. She held up the ideal of the "four square" girl, the girl who would take a high standard in what she called a physical, intellectual, religious and service test; and she showed how girls, working together, could get this training for themselves in their own community, whether it be in the select residential section of a city, in the crowded factory district, in a village, or in the open country. And she looked so real, so alive, so wholly magnetic and appealing as she talked to them that the desire to follow her caught and spread among the girls like flames on a thirsty prairie.

The girl sitting next to Nancy wasn't much interested in a "four square" development, but she hadn't taken her eyes off the speaker from the minute she stood before them.

"Physical development is all right, I guess," she observed. "A girl with shoulders like that could make a two-dollar waist look like a ten."

"She must have done some studying, too, to talk like that," Nancy added.

"And religion, I suppose, is as much an everyday thing with her as a cold water bath."

"She talked more about service, though," Nancy remembered. "I suppose she would try to carry those things through wherever she happened to be—even in a place as dead as the Hollow."

"Sure she would," the other agreed flippantly, and Nancy, observing the transparency of her Georgette blouse, and the bloom of her cheeks and lips, which never came from the things the speaker recommended, but was really cleverly done, saw that she knew nothing of the Hollow, or any other place far removed from department stores and elevators and pavements, and suddenly she felt a homesick longing to get back—back to the restful sight of the lake and the fields and the mountains, to the little round supper table before the crackling wood fire, to her own room and the bees and the cows, even to Cherry.

Nancy went home with a heavy sense of responsibility and a buoyancy due to something she couldn't explain. Her father, fearing that the reaction of coming back to the sordid duty of bringing home the cows would be more than she could stand after her taste of the city, had them already in the yard when she arrived—and Nancy was almost disappointed. The girl had told them how much the walks over the fields, the exercise, the sun, the air, meant to a girl's health and beauty. She had told of the wonderful things to look and listen for as you went along—the ground-bird's nest, the meadow-lark, the hidden haunts of winter greens and lady-slippers. But the thing that Nancy, because she had the gift of a philanthropic spirit could not shake off, was that she must spread the new gospel. The girl had called her subject, "What Girls Can Do For Girls," and Nancy never doubted that the message was for her.

Continued on page 24

Twelve Points in Rural Education

A Concise Statement of United States Policy

By ALLEN K. ALLIN

UNDER the Federal Government educational problems in the United States are being studied in a broad way, and a campaign of education for education is being carried on by the Bureau in charge of that work. It is a peculiar fact that even educational reforms do not come unless the way is first paved by education!

Thanks to the individuality of human natures, and to the fact that all men do not think alike and are naturally averse to radical changes in their personal estate, all great reforms must earn their passage before they arrive.

That new methods of education are needed—and are coming to meet the changing conditions of the day was the contention of Dr. J. L. McBrien of the U.S. Bureau of Education recently in an address before the Wentworth Board of Agriculture at Hamilton. As the result of many educational conferences in all parts of the United States twelve points had been advanced as the after-the-war needs of education in the land of the eagle.

That they may largely be adapted to the land of the maple is probably a fact, though with modifications.

After five years' study, Dr. McBrien advanced the twelve points:

1. *An academic school term of not less than* 160 *days.* While Ontario regulations call for a term of 200 days, the compulsory attendance required is only 80 per cent. of that, or 160 days, which had been accepted as an ideal minimum by the Federal Bureau.

2. *A sufficient number of teachers adequately trained for work.* This point, properly solved, eliminated 75 per cent. of all the problems, he urged, of rural education. The real progress and success of the rural schools depend upon it.

3. *Consolidated rural schools where practicable.* In the United States, said Dr. McBrien, there are 210,000 one-teacher, one-room schools, of which two-thirds can consolidate. Of the 70,000 left 20,000 could be eliminated. In the remaining 50,000 they should place the *best* teachers available, for the biggest task is found there—to make the one-teacher school serve the people better.

4. *A teachers' home—for the consolidated school.* Oregon had tried out the teacher's home idea for the one-teacher school, but had been compelled to admit that it didn't work out in practice, but in the case of consolidated schools it was found to extend the tenure of office of teachers, and increased the possibilities of the school. Coupled with the teacher's home, where the married principal also boarded the other teachers, was a school farm in the ideal scheme of consolidation.

5. *All-year session of school adapted to the local conditions.* This included provision for carrying on the school work in the homes during the vacation period—"school work" in its broadest sense. This included the work of a scientific agriculturist among the young people, and an expert on home economics among the girls, young women and married women. In one case a Mothers' Club had been organized in this way with good effect, and the mothers were able to exchange helpful ideas.

6. *Free county public libraries.* There are only 100 of these in the United States, though there is room for 3,400. "No single room school can have a library that will adequately serve all of the pupils," said Dr. McBrien.

7. *Community organization with the school as the intellectual, industrial and social centre.* Associated closely with this idea is the provision for housing returned soldiers in the country, to build up the rural communities. Good roads leading to the church and school, which would prove the social centre, were also necessary. He would get away from the idea of the average one-teacher rural school as:

> "A little house, on a little land, where for a little while, a little teacher, on a little salary, teaches little children, little things,"

in the words of President Coates of the Kentucky State Normal School.

8. *A high-school education for all country boys and girls without severing home ties.* That an ambitious people will go where educational facilities may be found was the statement of Dr. McBrien, who further asserted that a high-school education is the minimum education any Government should give its citizens where any claims are made to democracy.

The Consolidated School at Summerland, B.C., a splendidly equipped school in the Okanagan Valley, where a son of Inspector R. Lees, M.A., is principal. Inspector Lees, it will be remembered, wrote the series of articles for FARMERS' MAGAZINE on Consolidated Schools.

9. *A course of study in rural schools adaptable to the condition of the people where it is used.* The old system of pedagogy had seemed to be, he said, "to find out what a boy can't do, and whale the devil out of him to try and force him to do it." The new system, on the other hand, is to find out what he can do and boost him in his efforts.

10. *Federal aid.* In the United States they had this in many forms, including the Land Grant Colleges, Agricultural Colleges, the Agricultural Extension Act, Vocational Education Act, etc. A flaw in the past had been that they had been giving "unto them that hath," but not yet "to them that hath not" —as though to fulfill the Biblical saying. To-day there is a new measure pending before Congress by which 100 millions would be appropriated for public education to help the weak local schools, and to provide the best teachers possible for the small school.

11. *To eliminate illiteracy.* The military draft had brought out a deplorable condition of uneducation among the people of this country, which found that it had 7,500,000 illiterates among its people ten years of age and over.

12. *To Americanize the foreigner.* Notwithstanding the brotherhood of man and the fatherhood of God, some aliens had been harbored that would have stabbed the very heart of the nation during the late crisis. They were not ignorant, but were shrewd intriguers. The point was that they were largely able to operate because of the low standard of education prevailing in the country, upon which they played. The undigested, unnaturalized person is always a menace to any country.

Beekeeping is a pleasant business to many people. This picture will be of interest to some people who are, as they say, afraid of bees. It shows one beekeeper being embraced lovingly by many of these little workers.

On this framework the future educational work in the United States will be based, and the new steps taken. In Ontario, too, we are facing new educational problems, without the federal assistance that is extended across the line to the South of us. Just what form the educational reforms will take is not yet clear, but the question must be grappled in a fearless, intelligent, and reasonable manner.

The fact that, as in the case at Hamilton, Boards of Agriculture are ready and glad to join hands with Boards of Trade and bring eminent authorities on education half-way across a continent to discuss such questions indicated the trend of public thought. The public of Ontario is ready and fully ready to consider any reasonable method of increasing the educational standards of the Province, and adapt the educational system of the Province to the changing needs of the period.

Our Rural Schools

By THE EDITOR

IT has been one of the first concerns of our magazine to improve the conditions of our rural schools. Our readers will remember the many series of articles on the subject by such writers as E. C. Drury; W. C. Good; Inspector R. Lees; S. M. McCready and others. Our position, stated some time ago, was, that every rural teacher should have a home provided for him, and his salary be not less than $1,000 a year.

It is mighty unfortunate that there are so many bachelors on our good Canadian farms, while the schools are being filled by children of the foreigner, for whose welfare we show very little real common sense. We cannot continue to have here a country that is ideal in citizenship as well as in material things, if each one of us does not realize our responsibility in maintaining that high ideal of service in our little corner. In a little school on a hill near Drury's farm in Simcoe recently we noted the presence of a teacharage as we believe it is called, a house and garden for the teacher where a married man, with a love for his work, can make this his life job. We have many soldiers now who would fill this bill to perfection, and the rural school problem might get the attention it deserves. Moreover every school in Canada should teach English, even if another language is allowed also. Let us get down to plain, common sense in our educational work. Other articles are appearing in early issues.

SOME SIDELIGHTS ON OUR PARLIAMENT

Continued from page 12

having the present multitude of individual operators with rooms for each, a few efficient stenographic departments, such as are found in all large and properly conducted business establishments, could do the work with a third of the present personnel and with none of that unproductive time which a visitor to almost any of the departments may observe, with girls filling in their time reading novels or doing fancy work.

The same is true of another large class of minor employees. In the antechambers of the different departments will be found swarms of youths sitting around with folded hands. They are technically known as "messengers." What they really represent are those pledges of political love between the member of Parliament and some favored constituents. In sane business life, they would be represented—if there were any use for them at all—by a messenger service, at a tithe of the cost.

All these things are so well-known that, in ordinary times, it would seem like repeating old stuff to be referring to them at all; but the fact that we now have —no one knows for how long—a Union Government, with both parties professedly agreed to the abolition of patronage and political favoritism generally, points it out as the time to effect reforms, if they are ever to be effected. It is known, of course, that patronage—while possibly scotched—is far from killed. While there is no chance for its wholesale operation, as of old, it is still possible to slip in a favorite here and there; but it is nothing like so easy as it used to be, as certain Ministers have recently found out in the House, when certain very unpleasant facts with regard to appointments were stated.

THE RURAL COMMUNITY LIFE MOVEMENT

A Letter From the Khaki University

DEAR Fellow Members of the Rural Community Life Movements:—Once again I take up my pen just to let you know that I have not lost touch with the problems in which you are so deeply interested. I found on my arrival in London, England, to take up my work with the Khaki University of Canada, that I was scheduled to help organize classes in agriculture in the Canadian camps in England, with special relationship to dairying, in which I specialized as a student at O.A.C. Although not the work I hoped to do I took hold and went at the task. We now have a fairly well-organized agricultural staff, with lectures being given in twenty different places, with about 1,500-2,000 students enrolled, besides 750 correspondence students. I have now been charged with the responsibility of seeing that the Rural Community Life movement gets its share of attention and I am in the middle of preparing for the campaign. Our plans are to present the claims of Community Life in public illustrated addresses, which will be followed by small group classes studying a series of pamphlets which I am preparing on Home, School, Church, State, etc., in relation to the Community Life. These groups will be led by chaplains, Y.M.C.A. secretaries and others. This opportunity of presenting in a big, extensive way our schemes for rural work is one which I am sure you will all envy me. It looks as though we would reach every man in the Canadian Army, as we expect to have illustrated lectures and distribution of pamphlets to all on board the transports on the return trip to Canada.

The men will be looking for much more life when they get back to their farms. Our Movement must lead the way. Get ready now. If you have not already planned to attend the Summer School for Rural Leadership, do so at once. I am hoping to be able to get back for it, but one can never tell until we see how fast demobilization can be carried out. The conditions in the Army have made the men crave for more social and recreational life. They are more awake to the community life problems than ever before. We must not allow the interest to die down. Push all your plans for social centre work and community gatherings. They are all well worth while. If possible, I will try to send each a copy of the pamphlets when off the press.

Yours sincerely,

A. MACLAREN.

The Dairy and Cold Storage Branch of the Ottawa Department of Agriculture has issued an eight-page circular, giving exact instructions relative to the keeping of dairy herd records. The circular states that the department will pay to any qualified tester 10c for each Babcock test made from the composite samples of any herd. The party who does the testing must provide the Babcock tester and the necessary glassware and equipment for making the test. The department, however, will provide, free of charge, the sulphuric acid preservative tablets, return envelopes, credit slips, labels for the composite sample bottles and blank forms for recording the weights of milk at the farm. The duties of the testers will be to test the composite samples each month, enter the tests on the record sheets and forward the same to Ottawa. With the circular, a sample is given of the record and the manner in which it should be kept and blank application forms, first, for assistance in herd record work and, second, for employment as a milk tester. It should be stated that no postage is required when writing to the Dairy and Cold Storage Commissioner, Ottawa, and also that the circular here referred to can be had free from the Publication Branch at Ottawa.

Canadian Explosives, Ltd., of Montreal, have issued two catalogues, showing how explosives can be used to good advantage on the farm. Land clearing is a proposition that is engaging the attention of many men now and in this work there is no more useful servant than dynamite. It is easy to use now by almost everybody and full particulars as to its use in clearing land, making open drains, changing the course of creeks or of planting orchards will be found with illustrations in these books. Write to Can. Explosives, Ltd., Montreal, Que., for free copies.

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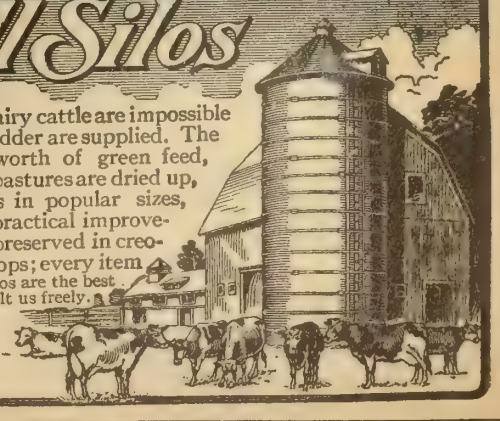

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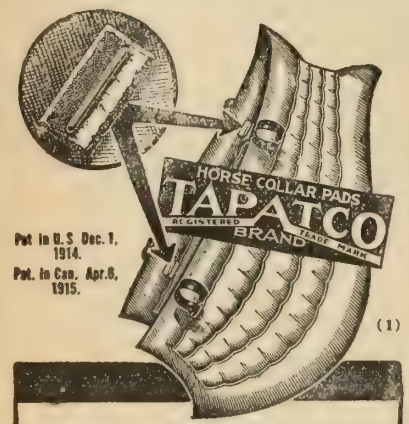

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WILDFIRE

A Tale of Wild Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

LIN Slone, a wild-horse hunter, sets out from the uplands of Utah and takes the trail of a magnificent wild stallion, which he names Wildfire. He travels for three months, reaching the Grand Canon of the Colorado, where he descends into the desert. He covers nearly five hundred miles and endures great privations, but at last succeeds in roping the horse.

Near the south side of the Grand Canon is a settlement called Bostil's Ford. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. Bostil is very jealous of Creech, another rancher, who also owns some splendid horses. The annual races are soon to take place, and Bostil fears that his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has often sworn revenge. Cordts and Dick Sears are horse-thieves. Lucy fears Cordts, who has threatened to carry her off.

One afternoon Lucy overhears one of Creech's riders asking Bostil to send the boat over, as the grass is all gone and he is now feeding his horses on grain.

CHAPTER VIII—*Continued*

"HOW about the flat up the canon?" queried Bostil. "Aint there any grass there?"

"Reckon not. It's the dryest spell Creech ever had," replied the other. "An' if there was grass it wouldn't do him no good. A landslide blocked the only trail up."

"Bostil, them hosses, the racers special, ought to be brought acrost the river," said Holley, earnestly. He loved horses and was thinking of them.

"The boat's got to be patched up," replied Bostil, shortly.

It occurred to Lucy that her father was also thinking of Creech's thoroughbreds, but not like Holley. She grew grave and listened intently.

There was an awkward pause. Creech's rider, whoever he was, evidently tried to conceal his anxiety. He flicked his boots with a quirt. The boots were covered with wet mud. Probably he had crossed the river very recently.

"Wal, when will you have the hosses fetched over?" he asked, deliberately. "Creech 'll want to know."

"Just as soon as the boat's mended," replied Bostil. "I'll put Shugrue on the job to-morrow."

"Thanks, Bostil. Sure, thet'll be all right. Creech'll be satisfied," said the rider, as if relieved. Then he mounted, and with his companion trotted down the lane.

The lean, gray Holley bent a keen gaze upon Bostil. But Bostil did not notice that; he appeared preoccupied in thought.

"Bostil, the dry winter an' spring here aint any guarantee thet there wasn't a lot of snow up in the mountains."

Holley's remark startled Bostil.

"No—it aint—sure," he replied.

"An' any mornin' along now we might wake up to hear the Colorado boomin'," went on Holley, significantly.

Bostil did not reply to that.

"Creech hain't lived over there so many years. What's he know about the river? An' fer that matter, who knows anythin, sure about thet bell-bent river?"

"It aint my business thet Creech lives over there riskin' his stock every spring," replied Bostil, darkly.

Holley opened his lips to speak, hesitated, looked away from Bostil, and finally said, "No, it sure aint." Then he turned and walked away, head bent in sober thought.

Bostil came toward the open door where Lucy stood. He looked sombre. At her greeting he seemed startled.

"What?" he said.

"I just said, Hello, Dad," she replied, demurely. Yet she thoughtfully studied her father's dark face.

"Hello yourself. . . . Did you know Van got throwed an' hurt?"

"Yes."

Bostil swore under his breath. "There aint any riders on the range thet can be trusted," he said, disgustedly. "They're all the same. They like to get in a bunch an' jeer each other an' bet. They want *mean* hosses. They make good hosses buck. They haven't any use for a hoss thet won't buck. They all want to give a hoss a rakin' over. . . Think of thet fool Van gettin' throwed by a two-dollar Ute mustang. An' hurt so he can't ride for days! With them races comin' soon! It makes me sick."

"Dad, weren't you a rider once?" asked Lucy.

"I never was thet kind."

"Van will be all right in a few days."

"No matter. It's bad business. If I had any other rider who could handle the King I'd let Van go."

"I can get just as much out of the King as Van can," said Lucy, spiritedly.

"You!" exclaimed Bostil. But there was pride in his glance.

"I know I can."

"You never had any use for Sage King," said Bostil, as if he had been wronged.

"I love the King a little, and hate him a lot," laughed Lucy.

"Wal, I might let you ride at thet, if Van aint in shape," rejoined her father.

"I wouldn't ride him in the race. But I'll keep him in fine fettle.

"I'll bet you'd like to see Sarch beat him," said Bostil, jealously.

"Sure I would," replied Lucy teasingly. "But, Dad, I'm afraid Sarch never will beat him."

Bostil grunted. "See here. I don't want any weight up on the King. You take him out for a few days. An ride him! Savvy thet?"

"Yes, Dad."

"Give him miles an' miles—an' then comin' home, on good trails, ride him for all your worth.. . . Now, Lucy, keep your eye open. Don't let any one near you on the sage."

"I won't. . . Dad, do you still worry about poor Joel Creech?"

"Not Joel. But I'd rather lose all my stock then have Cordts or Dick Sears get within a mile of you."

"A mile!" exclaimed Lucy, lightly, though a fleeting shade crossed her face. "Why, I'd run away from him, if I was on the King, even if he got within ten yards of me."

"A mile is close enough, my daughter," replied Bostil. "Don't ever forget to keep your eye open. Cordts has sworn thet if he can't steal the King he'll get you."

"Oh! he prefers the horse to me."

"Wal, Lucy, I've a sneakin' idea thet Cordts will never leave the uplands unless he gets you an' the King both."

"And, Dad—you consented to let that horse-thief come to our races?" exclaimed Lucy, with heat.

"Why not? He can't do any harm. If he or his men get uppish, the worse for them. Cordts gave his word not to turn a trick after the races."

"Do you trust him?"

"Yes. But his men might break loose, away from his sight. Especially thet Dick Sears. He's a bad man. So be watchful whenever you ride out."

As Lucy went down toward the corrals she was thinking deeply. She could always tell, woman-like, when her father was excited or agitated. She remembered the conversation between him and Creech's rider. She remembered the keen glance old Holley had bent upon him. And mostly she remembered the sombre look upon his face. She did not like that. Once, when a little girl, she had seen it and never forgotten it, nor the thing that it was associated with—something tragical which had happened in the big room. There had been loud, angry voices of men—and shots—and then the men carried out a long form covered with a blanket. She loved her father, but there was a side to him she feared. And somehow related to that side was his hardness toward Creech and his intolerance of any rider owning a fast horse and his obsession in regard to his own racers. Lucy had often tantalized her father with the joke that if it ever came to a choice between her and his favorites they would come first. But was it any longer a joke? Lucy felt that she had left childhood behind with its fun and fancies, and she had begun to look at life thoughtfully.

Sight of the corrals, however, and of the King prancing around, drove serious thought away. There were riders there, among them Farlane, and they all had pleasant greetings for her.

"Farlane, Dad says I'm to take out Sage King," announced Lucy.

"No!" ejaculated Farlane, as he pocketed his pipe.

"Sure. And I'm to *ride* him. You know how Dad means that."

"Wal, now, I'm doggoned!" added Farlane, looking worried and pleased at once. "I reckon. Miss Lucy, you—you wouldn't fool me?"

"Why, Farlane!" returned Lucy, reproachfully. "Did I ever do a single thing around horses that you didn't want me to?"

Farlane rubbed his chin beard somewhat dubiously. "Wal, Miss Lucy, not exactly while you was around the hosses. But I reckon when you onct got *up*, you've sorta forgot a few times."

All the riders laughed, and Lucy joined them.

"I'm safe when I'm up, you know that," she replied.

They brought out the gray, and after the manner of riders who had the care of a great horse and loved him, they curried and combed and rubbed him before saddling him.

"Reckon you'd better ride Van's saddle," suggested Farlane. "Them races is close now, an' a strange saddle—"

"Of course. Don't change anything he's used to, except the stirrups," replied Lucy.

Despite her antipathy toward Sage King, Lucy could not gaze at him without all a rider's glory in a horse. He was sleek, so graceful, so racy, so near the soft gray of the sage, so beautiful in build and action. Then he was the kind of a horse that did not have to be eternally watched. He was spirited and full of life, eager to run, but when Farlane called for him to stand still he obeyed. He was the kind of a horse that a child could have played around in safety. He never kicked. He never bit. He never bolted. It was splendid to see him with Farlane or with Bostil. He did not like Lucy very well, a fact that perhaps accounted for Lucy's antipathy. For that matter, he did not like any woman. If he had a bad trait, it came out when Van rode him, but all the riders, and Bostil, too, claimed that Van was to blame for that.

"Thar, I reckon them stirrups is right," declared Farlane. "Now, Miss Lucy, hold him tight till he wears off thet edge. He needs work."

Sage King would not kneel for Lucy as Sarchedon did, and he was too high for her to mount from the ground, so she

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mounted from a rock. She took to the road, and then the first trail into the sage, intending to trot him ten or fifteen miles down into the valley, and give him some fast, warm work on the return.

The day was early in May and promised to grow hot. There was not a cloud in the blue sky. The wind, laden with the breath of sage, blew briskly from the west. All before Lucy lay the vast valley, gray and dusky gray, then blue, then purple where the monuments stood, and, farther still, dark ramparts of rock. Lucy had a habit of dreaming while on horseback, a habit all the riders had tried to break, but she did not give it rein while she rode Sarchedon, and assuredly now, up on the King, she never forgot him for an instant. He shied at mockingbirds and pack-rats and blowing blossoms and even at butterflies; and he did it. Lucy thought, just because he was full of mischief. Sage King had been known to go steady when there had been reason to shy. He did not like Lucy and he chose to torment her. Finally he earned a good dig from a spur, and then, with swift pounding of hoofs, he plunged and veered and danced in the sage. Lucy kept her temper, which was what most riders did not do and by patience and firmness pulled Sage King out of his prancing back into the trail. He was not the least cross-grained, and, having had his little spurt, he settled down into easy going.

In an hour Lucy was ten miles or more from home, and farther down in the valley than she had ever been. In fact, she had never before been down the long slope to the valley floor. How changed the horizon became! The monuments loomed up now, dark, sentinel-like, and strange. The first one, a great red rock, seemed to her some five miles away. It was lofty, straight-sided, with a green slope at its base. And beyond that the other monuments stretched out down the valley. Lucy decided to ride as far as the first one before turning back. Always these monuments had fascinated her, and this was her opportunity to ride near one. How lofty they were, how wonderfully colored, and how comely!

Presently, over to the left, where the monuments were thicker, and gradually merged their slopes and lines and bulk into the yellow walls, she saw low, drifting clouds of smoke.

"Well, what's that, I wonder?" she mused. To see smoke on the horizon in that direction was unusual, though out toward Durango the grassy benches would often burn over. And these low clouds of smoke resembled those she had seen before.

"It's a long way off," she added.

So she kept on, now and then gazing at the smoke. As she grew nearer to the first monument she was surprised, then amazed, at its height and surpassing size. It was mountain-high—a grand tower—smooth, worn, glistening, yellow and red. The trail she had followed petered out in a deep wash, and beyond that she crossed no more trails. The sage had grown meagre and the greasewoods stunted and dead; and cacti appeared on barren places. The grass had not failed, but it was not rich grass such as the horses and cattle grazed upon miles back on the slope. The air was hot down here. The breeze was heavy and smelled of fire, and the sand was blowing here and there. She had a sense of the bigness, the openness of this valley, and then she realized its wildness and strangeness. These lonely, isolated monuments made the place different from any she had visited. They did not seem mere standing rocks. They seemed to retreat all the time as she approached, and they watched her. They interested her, made her curious. What had formed all these strange monuments? Here the ground was level for miles and miles, to slope gently up to the bases of these huge rocks. In an old book she had seen pictures of the Egyption pyramids, but these appeared vaster, higher, and stranger, and they were sheerly perpendicular.

Suddenly Sage King halted sharply, shot up his ears, and whistled. Lucy was startled. That from the King meant something. Hastily, with keen glance she swept the foreground. A mile on, near the monument, was a small

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black spot. It seemed motionless. But the King's whistle had proved it to be a horse. When Lucy had covered a quarter of the intervening distance she could distinguish the horse and that there appeared something strange about his position. Lucy urged Sage King into a lope and soon drew nearer. The black horse had his head down, yet he did not appear to be grazing. He was as still as a statue. He stood just outside a clump of greasewood and cactus.

Suddenly a sound pierced the stillness. The King jumped and snorted in fright. For an instant Lucy's blood ran cold, for it was a horrible cry. Then she recognized it as the neigh of a horse in agony. She had heard crippled and dying horses utter that long-drawn and blood-curdling neigh. The black horse had not moved, so the sound could not have come from him. Lucy thought Sage King acted more excited than the occasion called for. Then remembering her father's warning, she reined in on top of a little knoll, perhaps a hundred yards from where the black horse stood, and she bent her keen gaze forward.

It was a huge, gaunt, shaggy black horse she saw, with the saddle farther up on his shoulders than it should have been. He stood motionless, as if utterly exhausted. His forelegs were braced, so that he leaned slightly back. Then Lucy saw a rope. It was fast to the saddle and stretched down into the cactus. There was no other horse in sight, nor any living thing. The immense monument dominated the scene. It seemed stupendous to Lucy, sublime, almost frightful.

She hesitated. She knew there was another horse, very likely at the other end of that lasso. Probably a rider had been thrown, perhaps killed. Certainly a horse had been hurt. Then on the moment rang out the same neigh of agony, only weaker and shorter. Lucy no longer feared an ambush. That was a cry which could not be imitated by a man or forced from a horse. There was probably death, certainly suffering, near at hand. She spurred the King on.

There was a little slope to descend, a wash to cross, a bench to climb —and then she rode up to the black horse. Sage King needed harder treatment than Lucy had ever given him.

"What's wrong with you?" she demanded, pulling him down. Suddenly, as she felt him tremble, she realized that he was frightened. "That's funny!" Then when she got him quiet she looked around.

The black horse was indeed huge. His mane, his shaggy flanks, were lathered as if he had been smeared with heavy soap-suds. He raised his head to look at her. Lucy, accustomed to horses all her life, saw that this one welcomed her arrival. But he was almost ready to drop.

Two taut lassoes stretched from the pommel of his saddle down a little into a depression full of brush and cactus and rocks. Then Lucy saw a red horse. He was down in a bad position. She heard his low, choking heaves. Probably he had broken legs or back. She could not bear to see a horse in pain. She would do what was possible, even to the extent of putting him out of his misery, if nothing else could be done. Yet she scanned the surroundings closely, and peered into the bushes and behind the rocks before she tried to urge Sage King closer. He refused to go nearer, and Lucy dismounted.

The red horse was partly hidden by overbending brush. He had plunged into a hole full of cactus. There was a hackamore round his nose and a tight noose round his neck. The one round his neck was also round his forelegs. And both lassoes were held taut by the black horse. A torn and soiled rider's scarf hung limp round the red horse's nose, kept from falling off by the hackamore.

"A wild horse, a stallion, being broken!" exclaimed Lucy, instantly grasping the situation. "Oh! where's the rider?"

She gazed around, ran to and fro, glanced down the little slope, and beyond, but she did not see anything resembling the form of a man. Then she ran back.

Lucy took another quick look at the

red stallion. She did not believe either his legs or back were hurt. He was just played out and tangled and tied in the ropes, and could not get up. The shaggy black horse stood there braced and indomitable. But he, likewise, was almost ready to drop. Looking at the condition of both horses and the saddle and ropes, Lucy saw what a fight there had been, and a race! Where was the rider? Thrown, surely, and back on the trail, perhaps dead or maimed.

Lucy went closer to the stallion so that she could almost touch him. He saw her. He was nearly choked. Foam and blood wheezed out with his heaves. She must do something quickly. And in her haste she pricked her arms and shoulders on the cactus.

She led the black horse closer in, letting the ropes go slack. The black seemed as glad of that release as she was. What a faithful brute he looked! Lucy liked his eyes.

Then she edged down in among the cactus and brush. The red horse no longer lay in a strained position. He could lift his head. Lucy saw that the noose still held tight round his neck. Fearlessly she jerked it loose. Then she backed away, but not quite out of his reach. He coughed and breathed slowly, with great heaves Then he snorted.

"You're all right now," said Lucy, soothingly. Slowly she reached a hand toward his head. He drew it back as far as he could. She stepped around, closer, and more back of him, and put a hand on him, gently, for an instant. Then she slipped out of the brush and, untying one lasso from the pommel, she returned to the horse and pulled it from round his legs. He was free now, except the hackamore, and that rope was slack Lucy stood near him, watching him, talking to him, waiting for him to get up. She could not be sure he was not badly hurt till he stood up. At first he made no efforts to rise. He watched Lucy, less fearfully, she imagined. And she never made a move. She wanted him to see, to understand that she had not hurt him and would not hurt him. It began to dawn upon her that he was magnificent.

Finally, with a long, slow heave he got to his feet. Lucy led him out of the hole to open ground. She seemed somehow confident. There occurred to her only one way to act.

"A little horse sense, as Dad would say," she soliloquized, and then, when she got him out of the brush, she stood thrilled and amazed.

"Oh, what a wild, beautiful horse! What a giant! He's bigger than the King. Oh, if Dad could see him!"

The red stallion did not appear to be hurt. The twitching of his muscles must have been caused by the cactus spikes embedded in him. There were drops of blood all over one side. Lucy thought she dared to try to pull these thorns out. She had never in her life been afraid of any horse. Farlane, Holley, all the riders, and her father, too, had tried to make her realize the danger in a horse, sooner or later. But Lucy could not help it; she was not afraid; she believed that the meanest horse was actuated by natural fear of a man; she was not a man and she had never handled a horse like a man. This red stallion showed hate of the black horse and the rope that connected them; he showed some spirit at the repeated blasts of Sage King. But he showed less fear of her.

"He has been a proud, wild stallion," mused Lucy. "And he's now broken—terribly broken—all but ruined."

Then she walked up to him naturally and spoke softly, and reached a hand for his shoulder.

"Whoa, Reddy. Whoa now. . . . . There. That's a good fellow. Why, I wouldn't rope you or hit you. I'm only a girl."

He drew up, made a single effort to jump, which she prevented, and then he stood quivering, eyeing her, while she talked soothingly, and patted him and looked at him in the way she had found infallible with most horses. Lucy believed horses were like people, or easier to get along with. Presently she gently pulled out one of the cactus spikes. The horse flinched, but he stood. Lucy was slow, careful, patient, and dexterous. The cactus needles were loose and easily removed or brushed off. At length she got him free of them, and was almost as proud as she was glad. The horse had gradually dropped his head; he was tired and his spirit was broken.

"Now, what shall I do?" she queried. "I'll take the back trail of these horses. They certainly hadn't been here long before I saw them. And the rider may be close. If not I'll take the horses home."

She slipped the noose from the stallion's head, leaving the hackamore, and, coiling the loose lasso, she hung it over the pommel of the black's saddle. Then she took up his bridle.

"Come on," she called.

The black followed her, and the stallion, still fast to him by the lasso Lucy had left tied, trooped behind with bowed head. Lucy was elated. But Sage King did not like the matter at all Lucy had to drop the black's bridle and catch the King, and then ride back to lead the other again.

A broad trail marked the way the two horses had come, and it led off to the left, toward where the monuments were thickest, and where the great sections of wall stood, broken and battlemented. Lucy was hard put to it to hold Sage King, but the horses behind plodded along. The black horse struck Lucy as being an ugly, but a faithful and wonderful animal. He understood everything. Presently she tied the bridle she was leading him by to the end of her own lasso, and thus let him drop back a few yards, which lessened the King's fretting.

Intent on the trail. Lucy failed to note time or distance till the looming and frowning monuments stood aloft before her. What weird effect they had! Each might have been a colossal statue left there to mark the work of the ages. Lucy realized that the whole vast valley had once been solid rock, just like the monuments, and through the millions of years the softer parts had eroded and weathered and blown away— gone with the great sea that had once been there. But the beauty, the solemnity, the majesty of these monuments fascinated her most. She passed the first one, a huge square butte, and then the second, a ragged, thin, double shaft, and then went between two much alike, reaching skyward in the shape of monstrous mittens. She watched and watched them, sparing a moment now and then to attend to the trail. She noticed that she was coming into a region of grass, and faint signs of water in the draws. She was getting high again, not many miles now from the wall of rock.

All at once Sage King shied, and Lucy looked down to see a man lying on the ground. He lay inert. But his eyes were open—dark, staring eyes. They moved. And he called. But Lucy could not understand him.

In a flash she leaped off the King. She ran to the prostrate man—dropped to her knees.

"Oh!" she cried. His face was ghastly. "Oh! are you—you badly hurt?"

"Lift me—my head," he said, faintly.

She raised his head. What a strained, passionate, terrible gaze he bent upon the horses.

"Boy, they're mine—the black an' the red!" he cried.

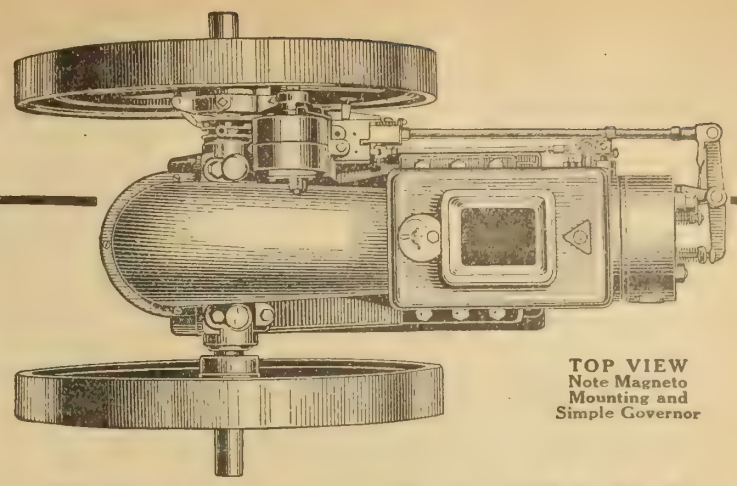
"They surely must be," replied Lucy. "Oh! tell me. Are you hurt?"

"Boy! did you catch them—fetch them back— lookin' for me?"

"I sure did."

"You caught—that red devil—an' fetched him—back to me?" went on the wondering, faint voice. "Boy—oh—boy!"

He lifted a long, ragged arm and pulled Lucy down. The action amazed her equally as his passion of gratitude. He might have been injured, but he had an arm of iron. Lucy was powerless. She felt her face against his—and her breast against his. The pounding of his heart was like blows. The first instant she wanted to laugh, despite her pity. Then the powerful arm—the contact affected her as nothing ever before. Suppose this crippled rider had taken her for a boy— She was not a boy! She could not help being herself. And no man had ever put a hand on her. Consciousness of this brought shame and



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THE RESULTS FOR 1918

ASSETS

Assets as at 31st December, 1918 - - - - - - - - $97,620,378.85
Increase over 1917 7,460,204.61

INCOME

Cash Income from Premiums, Interest, Rents, etc., in 1918 - - 21,651,099.69
Increase over 1917 2,362,102.01

PROFITS PAID OR ALLOTTED

Profits Paid or Allotted to Policyholders in 1918 - - - - 1,546,607.16

SURPLUS

Total Surplus 31st December, 1918, over all liabilities and capital 8,027,378,55
(According to the Company's Standard which is more severe than that laid down by the Insurance Act.)

TOTAL PAYMENTS TO POLICYHOLDERS

Death Claims, Matured Endowments, Profits, etc. during, 1918 - 9,768,564.28
Payments to Policyholders since organization . - ' - 78,862,881,15

ASSURANCES ISSUED DURING 1918

Assurances issued and paid for in cash during 1918 - - - 51,591,392,04
Increase over 1917 3,779,824.56

BUSINESS IN FORCE

Life Assurance in force 31st December, 1918 - - - - 340,809,656.13
Increase over 1917 28,938.710.42

THE COMPANY'S GROWTH

YEARS	INCOME	ASSETS	LIFE ASSURANCES IN FORCE
1872	$ 48,210.73	$ 96,461.95	$ 1,064,350,00
1883	274,865.50	735,940,10	6,779,566.00
1893	1,240,483.12	4,001.776.90	27,799,757 00
1903	3,986.139.50	15,505,776.48	75,681,189.00
1913	13,996,401.64	55,726,347.32	202,363 996 00
1918	21.651,099.69	97.620.378 85	340.809.656.00

SUN LIFE ASSURANCE COMPANY OF CANADA

1871 HEAD OFFICE MONTREAL 1919
T. B. MACAULAY, President

BUY W.S.S. WAR-SAVINGS STAMPS

anger. She struggled so violently that she freed herself. And he lay back.

"See here—that's no way to act—to hug—a person," she cried, with flaming cheeks.

"Boy, I—"

"I'm *not* a boy. I'm a girl."

"What!"

Lucy tore off her sombrero, which had been pulled far forward, and this revealed her face fully, and her hair came tumbling down. The rider gazed, stupefied. Then a faint tinge of red colored his ghastly cheeks.

"A girl! . . . Why—why 'scuse me, Miss. I—I took you—for a boy."

He seemed so astounded, he looked so ashamed, so scared, and withal, so haggard and weak, that Lucy immediately recovered her equanimity.

"Sure I'm a girl. But that's no matter. . . . You've been thrown. Are you hurt?"

He smiled a weak assent.

"Badly?" she queried. She did not like the way he lay—so limp, so motionless.

"I'm afraid so. I can't move."

"Oh! . . . What shall I do?"

"Can you—get me water?" he whispered, with dry lips.

Lucy flew to her horse to get the small canteen she always carried. But that had been left on her saddle, and she had ridden Van's. Then she gazed around. The wash she had crossed several times ran near where the rider lay. Green grass and willows bordered it. She ran down, hurrying along, searched for water. There was water in places, yet she had to go a long way before she found water that was drinkable. Filling her sombrero, she hurried back to the side of the rider. It was difficult to give him a drink.

"Thanks, miss," he said, gratefully. His voice was stronger and less hoarse.

"Have you any broken bones?" asked Lucy.

"I don't know. I can't feel much."

"Are you in pain?"

"Hardly. I feel sort of thick."

Lucy, being an intelligent girl, born in the desert and used to its needs, had not often encountered a situation with which she was unable to cope.

"Let me feel if you have any broken bones. . . *That* arm isn't broken, I'm positive."

The rider smiled faintly again. How he stared with his strained, dark eyes! His face showed ghastly through the thin, soft beard and the tan. Lucy found his right arm badly bruised, but not broken. She made sure his collar-bones and shoulder-blades were intact. Broken ribs were harder to locate; still, as he did not feel pain from pressure, she concluded there were no fractures there. With her assistance he moved his legs, proving no broken bones there.

"I'm afraid it's my—spine," he said.

"But you raised your head once," she replied. "If your back was—was broken on injured you couldn't raise your head."

"So I couldn't. I guess I'm just knocked out. I was—pretty weak before Wildfire knocked me—off Nagger."

"Wildfire?"

"That's the red stallion's name."

"Oh, he's named already?"

"I named him—long ago. He's known on many a range."

"Where?"

"I think far north of here. I—trailed him—days—weeks—months. We crossed the great canon—"

"The Grand Canon?"

"It must be that."

"The Grand Canon is down there," said Lucy, pointing. "I live on it. . . . You've come a long way."

"Hundreds of miles! . . . Oh, the ground I covered—that awful canon country! . . . But I stayed with Wildfire. An' I put a rope on him. An' he got away. . . .An' it was a boy—no—a *girl* who—saved him for me—an' maybe saved my life, too!"

Lucy looked away from the dark, staring eyes. A light in them confused her.

"Never mind me. You say you were weak? Have you been ill?"

"No, miss. Just starved. . . I starved on Wildfire's trail."

Lucy ran to her saddle and got the biscuits out of the pockets of her coat, and she ran back to the rider.

"Here. I never thought. Oh, you've

had a hard time of it! I understand. That wonderful flame of a horse! I'd have stayed, too. My father was a rider once. Bostil. Did you ever hear of him?"

"Bostil. The name—I've heard." Then the rider lay thinking, as he munched a biscuit. "Yes, I remember, but it was long ago. I spent a night with a wagon-train, a camp of many men and women, religious people, working into Utah. Bostil had a boat at the crossing of the Fathers."

"Yes, they called the Ferry that."

"I remember well now. They said Bostil couldn't count his horses—that he was a rich man, hard on riders—an' he'd used a gun more than once."

Lucy bowed her head. "Yes, that's my dad."

The rider did not seem to see how he had hurt her.

"Here we are talking—wasting time," she said. "I must start home. You can't be moved. What shall I do?"

"That's for you to say, Bostil's daughter."

"My name's Lucy," replied the girl, blushing painfully. "I mean I'll be glad to do anything you think best."

"You're very good."

Then he turned his face away. Lucy looked closely at him. He was indeed a beggared rider. His clothes and his boots hung in tatters. He had no hat, no coat, no vest. His gaunt face bore traces of what might have been a fine, strong comeliness, but now it was only thin, worn, wan, pitiful, with that look which always went to a woman's heart. He had the look of a homeless rider. Lucy had seen a few of his wandering type, and his story was so plain. But he seemed to have a touch of pride, and this quickened her interest.

"Then I'll do what I think best for you," said Lucy.

First she unsaddled the black Nagger. With the saddle she made a pillow for the rider's head, and she covered him with the saddle blanket. Before she had finished this task he turned his eyes upon her. And Lucy felt she would be haunted. Was he badly hurt, after all? It seemed probable. How strange he was!

"I'll water the horses—then tie Wildfire here on a double rope. There's grass."

"But you can't lead him," replied the rider.

He'll follow me."

"That red devil!" The rider shuddered as he spoke.

Lucy had some faint inkling of what a terrible fight that had been between man and horse. "Yes; when I found him he was broken. Look at him now."

But the rider did not appear to want to see the stallion. He gazed up at Lucy, and she saw something in his eyes that made her think of a child. She left him, had no trouble in watering the horses, and haltered Wildfire among the willows on a patch of grass. Then she returned.

"I'll go now," she said to the rider.

"Where?"

"Home. I'll come back to-morrow, early, and bring some one to help you—"

"Girl, if *you* want to help me more—bring me some bread an' meat. Don't tell any one. Look what a ragamuffin I am. . . . An' there's Wildfire. I don't want him seen till I'm—on my feet again. I know riders. . . . That's all. If you want to be so good—come."

"I'll come," replied Lucy, simply.

"Thank you. I owe you—a lot. . . . What did you say your name was?"

Lucy—Lucy Bostil."

"Oh. I forgot. . . . Are you sure you tied Wildfire good an' tight?"

"Yes, I'm sure. I'll go now. I hope you'll be better to-morrow."

Lucy hesitated, with her hand on the King's bridle. She did not like to leave this young man lying there helpless on the desert. But what else could she do? What a strange adventure had befallen her! At the following thought that it was not yet concluded she felt a little stir of excitement at her pulses. She was so strangely preoccupied that she forgot it was necessary for her to have a step to mount Sage King. She realized it quickly enough when she attempted it. Then she led him off in the sage till she found a rock. Mounting, she turned straight across country,

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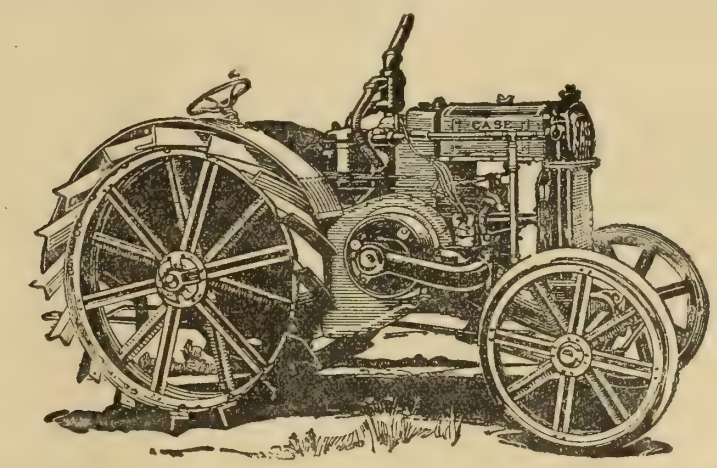

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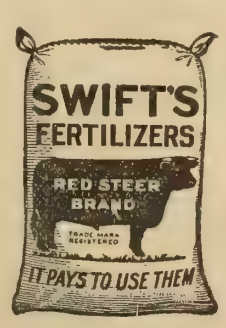

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meaning to cut out miles of travel that would have been necessary along her back-trail. Once she looked back. The rider was not visible; the black horse, Nagger, was out of sight, but Wildfire, blazing in the sun, watched her depart.

To be continued

HOW THE DAWN CAME TO THE HOLLOW

Continued from page 15

IT took all her enthusiasm to persuade the girls that by getting together they could do anything for themselves and the community, but at least the idea was a diversion and there were few diversions in the Hollow. Besides, there were few girls who could resist the ideal of the "four square" girl. They held a meeting in Nancy's bedroom and formed themselves into a club. At the convention they had talked about "Canadian Girls in Training Clubs," "Four Square Clubs" and "Fourfold Development Clubs." The girls of the Hollow decided to call theirs a "Four H" Club, an organization for the training of the head, the hand, the heart, and the health—it seemed to fill the fourfold development requirements perfectly.

It wasn't difficult to begin the "head" training. The speaker had said that girls should read newspapers and magazines and discuss current events and leading articles at their meetings. There were lots of daily papers coming to the Hollow, but few magazines, so they levied a fee and subscribed to two magazines, a home magazine and one of general interest, and they passed them around and read them from cover to cover. The speaker had said that girls should have practice in public speaking because every girl should be trained for leadership, so they made out a year's programme, giving every girl some address to deliver and some meeting to take charge of. She had said that every girl should have a chance to study music. Most of the homes had a piano or an organ, but there was no teacher in the Hollow, so they asked a teacher in town if she would come to the Hollow one day a week for six pupils, and they began with that. In June came the county excursion to the Agricultural College. The girls had often taken this excursion before and spent the day wandering over the college farm or visiting the stores down town. This year they went with the idea of learning more about the girls' college; they even took their courage in their hands and wrote asking the lady superintendent for an interview. Perhaps they couldn't all go to college, but if she would show them what the girls were doing there perhaps they could carry out some of the same things in the club.

One of the things she showed them was the library. This was one of their serious needs. There was a Sunday School library in the Hollow, but it was sadly inadequate for a Four H Club. They wanted books like the college girls had, filled with the things a four square girl should know—how to plan meals, how to manage a house, how to make a home restful and beautiful, how to protect the health of a family, how to train and care for children, books dealing with home ideals and ethics, and the place and responsibility of men and women in the community and the nation. And they had no money to buy such a library. "But," the superintendent informed them "the Government has decided that this is one of the worth while ways it can spend some of the country's money. It has made up a little circulating library of this kind just for girls' clubs. In fact, there are several ways in which they are ready to send the college out to the girls in the country. Why not make yourselves a girls' institute and have your own classes in domestic science, and sewing, and sanitation, and home nursing, and mothercraft?"

AND that was how the club got its library, and how the problem of the "hand training" was solved so easily. A few weeks later the girls cleaned up the old Temperance Hall and set up a table and an oil stove, and one day a young woman with a kit like a commercial traveller's got off the train at the Hollow, and proceeded to teach and demonstrate to them the theory and practice of preparing attractive, satisfying, balanced meals, keeping up a variety to tempt the appetite three times a day for every day in the year and supplying just the right thing for the health needs of every member of the family. Most of the girls were not by any means inexperienced cooks—they could make bread and pies and fancy cakes to no end—but they discovered a wide field in planning what things to have at the same meal to get the most pleasing and best balanced combination, they found a delightful interest in learning a variety of new ways of cooking such common staples as potatoes and eggs and apples; it gave them a new sense of the importance of cooking to know that it was the work of a dietitian, a chemist and an artist, that it meant the physical building of human beings.

In the fall when the new clothes and new fashions fever penetrated even to the Hollow, the Four H Club brought in a sewing teacher. It wasn't entirely because they wanted to learn to make their own clothes. It must be admitted that combined with their enthusiasm for "hand training" was a trace of their inevitable heritage from Mother Eve—the sewing teacher would bring them the very latest styles from town. The sewing teacher did bring some new designs with her, gracefully attractive, but surprisingly simple. Moreover, she taught them to distinguish between the artistic and the ugly, the beautiful and the vulgar in dress. She told them that the ultra new and daring styles were worn not by the gentle folk of the city or the people who could afford to buy the best things, but by a class of women who dressed to attract a very cheap kind of attention—that one of the saddest mistakes many a country girl coming to the city had made was to feel that her simple clothes were out of place and to give an entirely wrong impression of herself by buying something like she had seen on the street somewhere, which might be an actual label of lack of refinement. And she taught them to make their clothes express themselves, their own ideals of beauty and fitness.

In the meantime the girls had been having considerable hand training of their own in other lines. The bees had given Nancy an unusually busy summer, but they had done exceptionally well, and her father, when he gave her the money to buy her fall clothes, told her he thought the bees must have more than paid for it. He always considered them rather a nuisance around the place, but Nancy liked them, so he had kept them. Other girls had been working with chickens and turkeys and helping with the cows—not for themselves, their parents always looked after their financial needs, and most of them did it pretty well, but a gentle spirit of unrest seemed to be spreading. It wasn't just because the training scheme had given them a new spirit of independence either. In the fall canvassers for the Victory Loan went through the Hollow and almost everyone subscribed except the girls; they hadn't any money of their own. About the same time, in discussing their personal responsibilities, they decided that they should each adopt the practice of tithing; but they had nothing to tithe. They discovered that they wanted money of their own for other things and they knew they could make money; they were doing it all the time with bees and chickens and turkeys and cows, only they weren't handling it themselves. It only took a little fortification of courage, a great deal of embarrassment and a little explanation for Nancy to ask her father to turn over the bees to her for her own personal income. Most of the other fathers saw things the same way, but because a few of them didn't and because the Four H Club existed in the first place

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Ont. 21

Shorthorn S

to help all its members, it became also a poultry club with an egg circle of its own, which bought and sold co-operatively, and operating on the advice of experienced co-operators waxed prosperous as a business venture. The leader, visioning the farthest possibilities of the girls in training plan, had never dreamed of bringing chickens into it.

AND one thing that took the drudgery out of the caring for the bees and chickens and the work with the cows, was the assurance of the leader that several hours out of doors every day was a girl's best health and beauty tonic. They remembered, however, that this wasn't the only requirement. They needed more education along health lines, a finer understanding. "Self knowledge, self reverence, self control," was a theme of her message that Nancy had not forgotten. They might try to study health care and physiological laws for themselves from books, but there was a better way. Again they cleaned up the Temperance Hall, even took a horse and hauled the firewood that their fathers had donated, and they set up a bed for nursing demonstrations, and a woman, who was a doctor, came and gave them another series of lessons. She taught them how to take care of about any emergency or illness that might occur in their homes or their neighbors' homes; how to guard against sickness and build up strong, buoyant, resistant health, and then with the reverence of an idealist and the science of a physician, she told them the true story of life and creation, and sent them away with a new regard for their womanhood. The next day she began to teach them mothercraft; they even borrowed a baby and had it bathed and dressed in the class—the mother of to-morrow was not to suffer the agony her mother had endured when she was left alone to give her first baby a bath.

But the doctor told them that no amount of education, or of working exercise out of doors would build up the perfect, buoyant health of the ideal four square girl. She must learn to play and to play mostly outdoors. The girls in the Hollow had never played much for generations back; they had gone driving and had parties and danced, sometimes till four o'clock in the morning in a crowded house, where the air by midnight became so vitiated that the lamps actually burned blue and nobody knew why. It was a rule of the Four H's that no dance should last after eleven o'clock, and they had just as radical ideas about some other things like the little clandestine pairings off at picnics and the almost all-night sitting-up that had been a feature of the social life of some of their older sisters. Yet, before the year was out there must have been many a mother in the Hollow who felt like a hen who has hatched out a duckling as she watched from an upstairs window her daughter, with a lot of others just as unconcerned, dive shamelessly into the pond in a knee-length bathing suit, and swim straight across like a boy, or start off on a ten-mile hike through the woods in a smock and bloomers. Nor could they understand how these girls could work all day and then play tennis for an hour or two at night. Still they were rather proud of them.

When it came to the heart training or what the leader would have called the "religion and service" activities, the girls were more at a loss to know what to do, or to find a standard that left nothing wanting. They could personally do some piece of unselfish service every day, help in the work of their own churches and do everything possible to make their own homes happier and better, but it didn't seem enough. Perhaps the trouble was that they had not found an ideal fine enough or high enough; even the girl who had given Nancy her inspiration didn't seem to satisfy them here, but perhaps she could tell them what to do.

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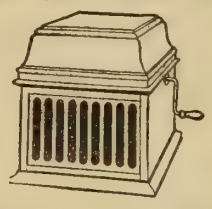

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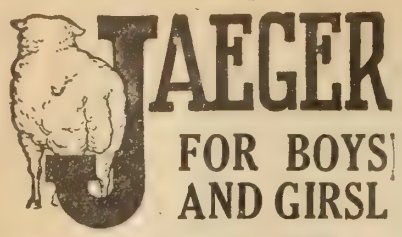

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imitation," she wrote back to them. "You might have in mind your ideal all-round four-square girl and I may have mine, but my standard might be higher than yours. The only perfect standard is what God wants you to be, which has been shown in the life of Christ." She didn't suggest just what they might do, but she had given them a standard by which they could test every plan they might have and it kept them very safe.

One of the first things they wanted to do was to waken the Hollow from end to end. The one institution of common interest in the community seemed to be the public school, and it was, by some accident, the one most in need of attention. It was impossible to get the co-operation of people in any community movement while they slept, and no sound sleeper was likely to take much notice of the antics of a crowd of neighbor girls whom he has known since they ran about with bare feet and pinafores and who can't see that they've changed much. Several schemes might have been tried, but the one that seemed most promising was to get a Chautauqua troupe to come and pitch their tents in the Hollow for a week and give a stirring course of concerts and lectures. And the Hollow responded as they could never have hoped for. They had never noticed there were so many people living between the mountains. The older people turned out as they had not done since camp meetings were held in the same grove years ago, and the young men and the maidens whom the Four H's had never dreamed existed within motoring distance, came from the east and the west, and after the Chautauqua people had folded their tents and gone, some of these still came.

It seemed a strange thing for a few girls to adopt the school that had been in existence fifty years before they were born, but with the proceeds of the Chautauqua week and the work partly of their own hands, they had it cleaned and painted, and furnished with a well and a furnace that the children of the present day might not have to lie on their tummies and drink from the creek in summer as they had done, or sit shivering with cold feet and numb fingers every forenoon all winter, while the box stove was ineffectually trying to get some heat radiated beyond its own sheet iron jacket. The next winter, partly because they wanted to give the school a library and partly because they had caught the Chautauqua enthusiasm for theatricals, they put on a play of their own and the people from the east and the west thronged to the Hollow again.

If the girls of the Hollow had been told a year ago that they would be appearing on the stage in the Temperance Hall and acting for an audience that crowded the house to the doors and the yard to the gate, so that they had to repeat it a second night, they would possibly have run away to escape it, but they had outgrown a lot of their timidity during the year. If they had known that their play would be called "The Temple of Fame," they would have wondered if anything could be more inappropriate for girls destined to live out their lives in the isolation of the Hollow; they had perhaps a new conception now of the things that are really great. So they came dressed as Queen Victoria, and Florence Nightingale, and Mrs. Pankhurst, and Mother Goose, and the Red Cross Nurse, and about every other famous woman in history and legend and life, and they appeared before the judge and presented their claims. And the last to come in led two little children—and the prize was given to the mother. The girls could have arranged to have decided in favor of any other character. Had it any significance I wonder. And would the girls who were, even then, planning to leave the Four H Club for new homes to the east and the west of the Hollow see anything more in the possibilities of the life ahead of them? Would they make any better mothers?

As for Nancy, the perfect four square ideal kept receding as she tried

to reach it. She wanted something more than even the training practice in the Hollow could give her—she was eager now for the college course that she had despised before, because "it would only mean coming back." But that's another story. For we think we can see all that life is ever likely to give or ask of us, but we don't take into account the possibilities of the things which we don't plan or arrange for ourselves, the things waiting around the bend in the road ahead.

ONE SCHOOL A COMMUNITY CENTRE

IS the rural school always a place of dead abstract book learning, and a thing apart from the interest of the community, as in the popular criticism? Last month we attended the St. Patrick's Day exercises at the public school at Malton, where the teacher makes it a practice to break away from the regular time-table occasionally to give some training in the broader lines of citizenship. The children had decorated the room with paper shamrocks, they had made a harp; they had potatoes and a blarney stone and the national customs were duly explained and demonstrated. They had a hot lunch in the school and the children proposed toasts and responded to toasts with ease and correctness and the toasts were drunk in cocoa. The Women's Institute and the trustees and the county home demonstrator came and took part in the programme and the children sang and recited and entertained the visitors generally. And these "days" are a regular feature of the school programme. It is a way in which one teacher, Miss Ruth Holmes, is making the school a live community institution.

MORE ABOUT PIGS

By W. E. S. J.

I HAVE seen quite a lot of discussion in your paper on the profit of hog raising. I wasn't in the hog business very strong, only for our own use. Perhaps I wouldn't make out as well in a larger bunch but I think I made out fairly well. I bought two small in-bred sows last May for $18.00. On account of them being in-bred they only raised me 7 pigs, which were born the latter part of July. I fed them all of the spare sweet milk and the butter-milk from 3 cows after feeding 2 calves. I didn't count on anything for the milk as I had nothing else to use up the milk.

May 1st, 1918 Costs.

Cost of sows, 80 lbs. each	$18.00
May 1st until after threshing 500 lbs of chopped oats	15.00
Ran on stubble for 6 weeks	
Cost of fattening, 12 bus. whole soaked wheat	25.00
150 lbs. ground corn	5.63
Total cost	$63.63

Proceeds:—

Sale of 7 young pigs	$44.00
440 lbs of dressed pork at 20 cents per lb.	88.00
	$132.00
Cost.....	63.63
Profit.....	$ 68.37

EDITOR'S NOTE.—*This is a profit of less than $10 per pig to cover labor, run of a farm, all sweet milk they could use, under ideal conditions.*

DEAN RUTHEHRFORD TO INSPECT LANDS

PROF. W. J. Rutherford, Dean of the Faculty of Agriculture, Provincial University, Saskatoon, has accepted the chairmanship of the committee to examine the lands now held under grazing leases in Southern Alberta to ascertain what areas will be suitable for mixed farming in connection with the campaign now being carried on by the Soldier Settlement Board.

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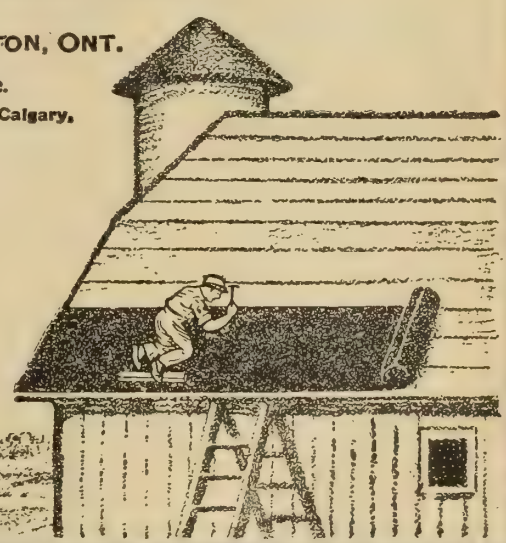

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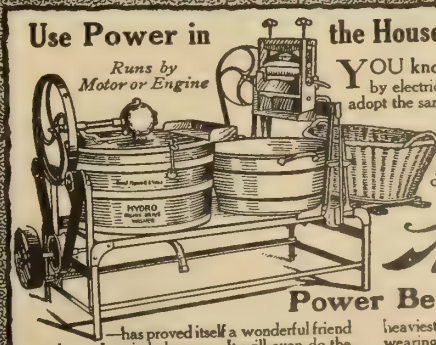

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Walt Mason on the Farm

The Bard of Emporia Tells of his Agricultural Experiences

AN inspiring and amusing sketch is contributed to the *American* by Walt, Mason, the Canadian-born poet, who recently told in MACLEAN'S of his Canadian experiences. He deals with the problem of the "misfit"—the man who has never found his proper niche. Uncle Walt, himself, was something of a misfit, during the first half of his life and he wandered around from one thing to another, as he very amusingly tells. Finally he found his place and since then success has come his way in amazing measure. He writes just of the condition which makes misfits.

Myriads of people are started wrong by their parents. The proud father surveys his bunch of children, and says: "Algernon Augustus will be a preacher; there always has been a clergyman in the family since the days of William the Corn Curer. Achilles Philologus must be a lawyer, for he already shows a tendency to grab everything in reach, and raises a rough-house if anything is taken from him. Arabella has decided musical talents, and I hope to live to see the day when she will play rings around Paderewski, or back Galli-Curci off the walk as a vocalist."

So the children are reared and educated accordingly, and in the fullness of time we see Algernon driving a dray, and Achilles impounding dogs for the municipality, and Arabella is a tight-rope walker in the circus. Meanwhile, after quitting their prearranged vocations, they have tried everything, and never found the thing they really could do. There probably is some task fitted to every man, something of which he might make a glittering success; but unless he stumbles against the task accidentally, or it is revealed to him in a dream, he may never identify it. And so we have our mute, inglorious Miltons who are plying spades because they never chanced to get hold of lyres, and village Hampdens and Cromwells running shooting galleries or hot-dog joints.

I had lived half a century before I discovered that I could do one thing well enough to make life a success—and then another man discovered it for me. I had a talent for rhyming, and never valued it. I had the idea that I could write profound editorials, and draw pictures, and make two bales of hay grow where one grew before, and a lot of other things; but there were countless people who could do such work better than I could, and I groped around for years and years, trying to find some place where I really fitted, and always was a square peg in a round hole. And all the time I carried around the one little talent that might have provided me an igloo in Easy Street.

As a boy I worked in a woolen mill in Canada, and hated the work bitterly. I was convinced that people should quit wearing clothes, so that woollen mills might be abolished. Later I worked for a year or more in a hardware store. Every new job always looked charming until I got into it. Being imaginative, I had visions of a rapid rise to a partnership. I would marry the beautiful daughter of the chief partner and live happy ever after, with vassals and serfs at my side. But the dreams always fizzled out soon. I found the hardware business a bore. Instead of selling handsome silverware to stately dames, I was kept busy carrying kegs of nails up-stairs. There were no laws governing working hours in those days, and a clerk began his duties at one o'clock in the morning and got through at midnight.

Perhaps the most interesting and amusing part of his narrative deals with his experiences on the farm.

Farming has a peculiar fascination for people who have once indulged in it. When I am on a farm I detest every kind of work connected with it; but when I am at other work I hear the barnyard calling, calling me.

During the reign of Grover Cleveland I yielded to this urgent call once more, and established myself at Beatrice, Nebraska, where I bought a suburban home, and rented fifteen acres of land, and mixed up newspaper work and agriculture.

I wrote prose essays and stories, and sold them for what they would fetch, and also contributed a column to a local newspaper. The total income from my literary labors amounted to about fifteen dollars a week. I raised corn and hogs and thunder, and had settled down to harmless mediocrity and genteel poverty. I had my little talent as strong as ever, but didn't consider it of any worth.

At this time there lived in Beatrice a young man named George E. Haskell. He was a great contrast to myself. He knew just where he fitted, and had definite plans in life. He was operating a small creamery, and while he conducted his air-cooled churn he was dreaming dreams. But his dreams had some sense and purpose in them. The creamery business in the West then was a joke. There were cheap little creamery buildings all over the country, and they were forever going broke.

Mr. Haskell had the idea of organizing the creamery business on a sane basis, with a central plant for churning, and receiving stations for collecting the cream. Meanwhile, he wanted to get the farmers interested in dairying, and proposed to establish a monthly farm paper to spread the right kind of propaganda. He offered me the job of editing it, and I seized it with eagerness, although I knew less about cows than the cows knew about me. But I read bulletins and trade papers and stored my mind with much information.

So I began writing wise things about balanced rations and butterfat, and after a while convinced myself that at last I had found my true sphere. Dairying was the square hole adapted to the square peg. There's nothing more convincing than your own writings. Cows in those days were reasonably cheap, and I managed to buy nine or ten of them, and got stung in several instances. The man who goes shopping for cows should be able to judge the goods. People who sell cows, have small regard for the truth, as a rule, and their affidavits are worthless.

I bought a large black cow from a man who had held many offices of trust and honor. When I started to lead the animal away he and his wife both wept, and said it was like parting from a beloved aunt. They put their arms around Bossy's neck, and made such a fuss that I felt guilty when I took her away. The cow really had an amiable disposition and an excellent moral character, but she was subject to fits, and sometimes when I'd be milking her she'd sit down in my lap and squash me against the side of the stall.

I had another cow, a Holstein, that must have taken boxing lessons with her feet. She was the most accomplished kicker I ever saw, and was always landing left hooks and other haymakers on my shirt bosom, until I learned to tie her legs together when milking her. I sold her to Kirk Griggs, a prominent ranchman, and he said he got along with her all right, as he milked her through a fence. I fed my cows in strict accordance with the rules laid down by Hoyle and other authorities. Their rations were so nicely balanced that I used an apothecary's scale in preparing them. I wanted to publish the results in the farm paper for the guidance of other producers of butterfat—but I didn't; they were too discouraging. This enterprise, like nearly everything I tried, was a dismal failure. My cows didn't produce enough to pay for the refreshments they consumed, and in the end I took them to the creek and drowned them.

My painful experience with cows and balanced rations left me an embittered man who smiled no more; but after a year or so I recovered sufficiently to become interested in hogs. Many people were becoming beastly rich raising hogs, and if they could do it I surely could. So I fenced in several lots, and built the

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most fearful and wonderful hog house ever seen in the United States. They talk about it in Beatrice to this day. It had galleries and porches and all modern conveniences. People used to stop, as they drove by, to see my hogs sunning themselves on a balcony twenty feet from the ground. You see, I had studied the subject thoroughly, and found authorities agreed that most swine diseases were due to lack of exercise. So I made my hogs exercise. In order to get anywhere they had to traverse corridors, and climb stairways and loop the loops, and perform on the horizontal bar.

I had a beautiful bunch of porkers when fall came, and was arranging to sell them, and the money was to pay off an indebtedness that had been weighing me down a long time. One morning I went out with a bucket of sparkling swill, and found one of my largest hogs dead. Two or three others were sick. Then for days together I was busy burying my dead hogs. The whole bunch, with the exception of two or three runts, died the death. It is strange how the runts always hang on, when youth and beauty are being carried to the tomb.

I covered myself with sackcloth and ashes and established a lodge of sorrow, and for weeks my wife handed me my victuals with a ten-foot pole, for it wasn't safe to approach me.

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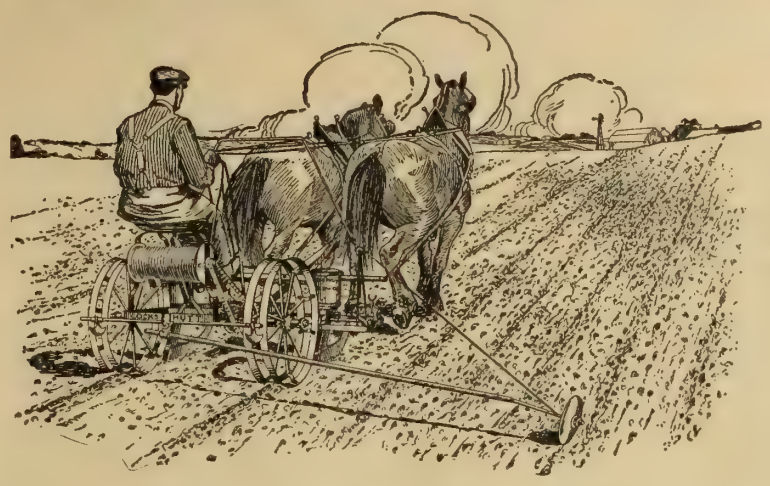

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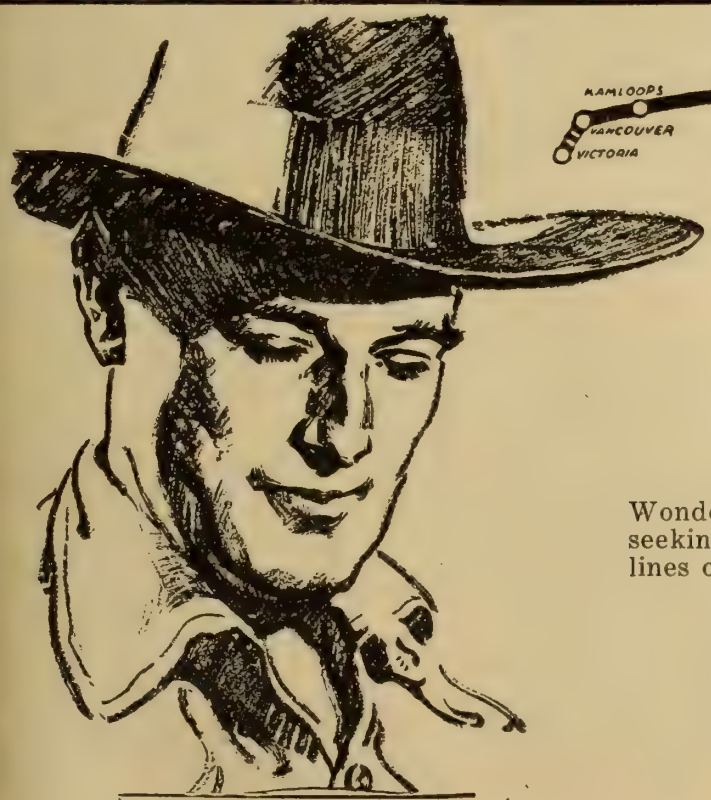

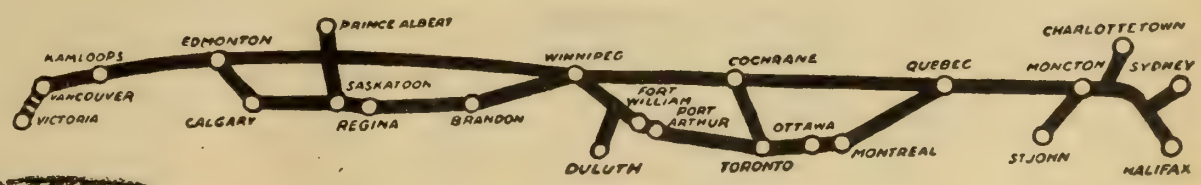

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Laurity Selgenson, of Standard, Alberta, irrigated 70 acres of wheat and oats. His irrigated wheat yielded 15 bushels an acre more than that which was not irrigated. His oats 30 bushels more.

W. Smith, broke 34 acres raw prairie land in the spring near Brooks, Alberta. This he seeded to wheat and irrigated. His crop averaged nearly forty bushels to the acre.

V. C. Chapman, of Rockyford, Alberta, had an average of forty bushels an acre of No. 1 wheat from 46 acres of irrigated land. Part of his land irrigated earlier yielded more than 50 bushels an acre.

M. C. Hanson, of Baintree, threshed 1250 bushels No. 1 wheat from 35 acres of irrigated land, an average of more than 36 bushels to the acre.

F. J. Meech, who is farming 80 acres near Lethbridge, harvested 1500 bushels of wheat, 250 bushels of oats, 6 tons of oat hay, 25 tons of potatoes and from an acre set aside for a garden sold $75 worth of vegetables besides growing sufficient for his own family's needs for the year.

H. B. Ramer, who settled at Duchess, in 1917, on a quarter section, harvested 1500 bushels of wheat, 700 bushels of oats and 550 bushels of potatoes. This crop was worth $4,360. In addition he grew watermelons, cantaloupes, tomatoes, sweet corn in his garden.

C. A. Waltemath, of Gem, harvested a crop of 55 bushels to the acre of oats which were not seeded until June 5th.

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Inquiries About Grande Prairie

By W. D. ALBRIGHT

A NEVER-ENDING stream of questions flows in concerning the Peace River country. During the war I was disinclined to encourage migration because of economic and patriotic reasons. A homesteader must needs be a consumer for several years before he is much of a factor in production, and even when he does become a producer his products are transported to world's markets at great cost of labor and money. Hence in a time of stress such as we have just passed through it was better that farmers should be induced to remain in the developed regions as close to seaboard as possible. Now that the war is over and reconstruction faces us, the situation is changed and much is to be gained by encouraging a healthy migration of settlers to the great new regions on the eve of development. Therefore, we feel inclined to publish correspondence with inquiries. A recent letter requesting quite a broad scope of information about Grande Prairie, concludes as follows:

"I would be interested to know something of proposed railroad extensions in the district westward through the Peace River block in British Columbia. The element of risk from summer frosts, hail, etc., should be considered; and the length of time necessary to feed stock in the winter would be valuable information."

A little over five years' experience in the Upper Peace River country leads me to believe that as a purely grain-raising area, only a few favored parts are as yet sufficiently safe from frost, but that for mixed farming it is pre-eminently adapted. Perhaps fifteen per cent. of Grande Prairie is reasonably safe for wheat, this part being high land bordering lakes, and occasional elevated slopes. On much of the rest Marquis wheat will mature satisfactorily in perhaps two or three years out of five. This ratio will likely improve in time.

Hail injury is rare. Rather strong winds prevail at times, but I have never heard of a real tornado or blizzard. Some of the weather is delightfully calm and pleasant and the rigor of winter is greatly modified by the Chinook winds, especially near the B.C. boundary. There is a well-nigh incredible difference between extreme temperature registered on high and on low land, as much as fifteen degrees Fah. having been recorded of a still winter night by official instruments three miles apart, at points which do not, at that, represent the full disparity. In ordinary moderate weather the readings of these instruments closely tally. The writer lives near the crest of a hundred-foot slope and the lowest temperature experienced in five and a half winters has been —52° Fah. As low as 65 and 70 below has been elsewhere registered.

Annual precipitation is in the neighborhood of 14 to 16 inches, considerable of it occurring in early summer. May and early June are frequently inclined to be cool and dry, but cereals seeded under proper conditions may be depended upon to come along nicely. Garden stuff is often tardy but with patience good vegetables can be produced and small fruits are promising.

In the matter of grain, oats are the sheet anchor and they grow well. Experimental plots this past summer ran from 101 to 122 bus. per acre, the former by an early oat, Daubeney, which ripens with barley, and was cut Aug. 24th. Huron spring wheat gave 40 bus. per acre; winter rye over 57 bus. and winter wheat, badly winter-killed in 1917-18 by ice crusts, 20 bus. and over.

We are experimenting extensively with grasses and clovers. In dry seasons they are sometimes disappointing, but in showery ones, such as 1918, they do well. Timothy seeded alone last May and June cut in August nearly a ton and a half of cured hay. Western rye grass is hardier than timothy. Sweet clover does well. Alsike holds some promise. Grim alfalfa winters safely as a rule but produces only moderately thus far.

Cattle thrive well with much less shelter than is necessary in the Eastern Provinces. The feeding period is five to six months but in many winters they can graze a part of their keep during a sixth to a quarter of this time. Wind-tight shed shelter, opening to the south, is all that mature beef cattle need. Horses may range out the year round but should be fed for three or four months when the snow is deep and should have at least storm protection. Hogs do well, sometimes, I am told, making very fair gains on native pasture alone, though I have never tried that. Wild vetch and peavine abound in the scrub and brule, especially of the newer districts. I see no reason why it should not prove an excellent sheep country in time.

We hope for railroad extension, this summer, of the Grande Prairie spur westward. On the main line of the E.D. & B.C., grading has been completed, I think, from Spirit River westward to Pouce Coupee prairie, in the B.C. Bloc. Effort is being put forth to get the Dominion Government to extend forthwith the Onoway branch of the C.N.R., whose survey projects northwestward from Edmonton through and beyond Grande Prairie. Both this line and the E. B. & B. C. contemplate junctions which will link us up with the Pacific Coast, our logical future outlet.

DATES AND ORDER OF SEEDING

By CHINOOK

HOW early to sow each particular class of grain is always a practical question. Even spring wheat may be sown too soon for best results in an abnormally early season, as when spring opens in March, to be followed by a month of cold, dry, frosty weather. So claims Seagar Wheeler, the champion wheat expert of Saskatchewan, and I am convinced he is right. As a rule, however, in climates of short summers, liable to early autumn frosts, it is advisable to sow wheat as soon in the spring as one can get on the land. In our own district, it appears to be wise in many cases even to mud the wheat in. This insures moisture for germination and gains time for maturity. A farmer trained under Eastern conditions looks askance at the practice, fearing bad effects upon the soil, but in the drier climate of the West these effects are not always at once apparent. Sometimes a seed bed mudded through with the drill pulverizes later into a fine mulch. I am not prepared to dogmatize concerning the practice of mudding in but, at all events, sow the wheat fairly early. After, say, the middle of April, get busy with the drill at the first opportunity. If the season opens late, one need not be unduly alarmed but do not miss the seeding season when it comes. An early spring is often followed by a slow growing season or an early fall. Seize time by the forelock.

Oats and Barley Next

Most farmers follow wheat seeding with the sowing of oats, then barley, first because oats require a longer time to mature than barley, and secondly, because many believe that oats are less likely to be injured by late spring frosts. The first point is valid. Of the latter I am not sure. Last May we had a severe test and so far as I could observe on plots all seeded at the same time and situated side by side, the barleys were no worse affected than the oats, and recovered more rapidly. There is this point also: If oats fail to mature they make good "green feed." If barley fails to mature it is more or less unsafe to feed in the sheaf because of the awns. For this reason I have known men in exceptional cases to sow barley before oats, since it was more important to have the barley ripened. As a general practice, however, it is best to sow oats after wheat and then barley. In most parts of the West the first of May is a good average date for sowing oats.

Wherever the maturing of seed is of special importance, it is a good plan to sow a small acreage of oats and barley quite early, even in April. The yield may not always be so large as from somewhat later sowing, but one will be more certain of maturing a strong-germed grain, unscathed by late-summer frosts. It is worth considerable sacrifice of yield to obtain good seed for the next spring's sowing.

Field peas should enter the ground quite early in our Peace River region, as they are more susceptible to late-summer than to May frosts, and even the Arthur variety generally needs every day's time that our short summers afford. In the longer seasons better yields might be obtained by not sowing too early, but average results with us favor getting the seed in in April.

With flax I have had little experience, but

that little inclines me to favor early May seeding for our latitude.

Our experience with field roots is not sufficiently extensive to be conclusive; but so far as it goes leads us to favor sowing all kinds about the first of May, taking one year with another. Back East I remember hearing a rule for sowing turnips. It ran, "First of July, wet or dry." Out here seeding the first of July would not produce much but a crop of tops.

An inquirer wishes to know when is the best time to seed down with grasses and clovers. I am not sure. We are experimenting rather extensively with hay and pasture crops, but are not as yet ready to form definite opinions. Results to date lead us to think that when a nurse crop is not to be used the best plan is to work the land well in May and early June so as to secure a fine tilth, and destroy successive crops of weeds, then try to sow the "seeds" just nicely ahead of the June rains. This conduces to uniform healthy growth and gives the grasses an even start with the weeds; for even on the cleanest of breaking, quite a few native ones will appear. In a favorable season, timothy sown on good land in early June has given us a ton and a half of cured hay per acre in August of the same year, though cut with the mower bar set high. Of course there are dry summers when no crop worth mentioning could be cut in the season of seeding down.

If a nurse crop is to be used, I expect the best one is probably oats, sown thinly and late for the production of "green feed," the grass seed being either sown with a grass-seeder attachment, or, in the absence of that, mixed with the oats in the drill box, or else broad-casted and harrowed in. On land that is not quite clean, a light nurse crop of late-sown oats has the advantage of subduing somewhat the progress of weeds.

FLOWERS FOR THE FARM

ANNUALS are splendid for purposes of cut bloom. Some of the best for this purpose as well as for garden display are as follows: China Asters, Sweet Peas, Nasturtiums, Sweet Sultan, Sweet Scabiosa, Snapdragons, Everlastings, Zinnias, Pot Marigold or Calendula.

Other good annuals are:—

Low Growing.—Pansies, California Poppy, Mignonette, Petunias, Portulaca, Pinks, Drummond Phlox, Verbenas;

Medium Height.—Everlastings, Balsams, Coreopsis, Larkspurs, Gaillardia, Clarkia, Salvia, Stocks, Poppies;

Tall Growing.—Cosmos, Helichrysum, Tall Larkspurs, Nicotiana, Salpiglossis, Sunflowers.

CLEARS HALF IN FEEDING HOGS

By H. W. McKenzie

OUR method of feeding hogs of all ages and sizes may seem a peculiar one to many but is one which we have found very successful. Our ration consists of ground alfalfa, shorts and a small amount of mixed chop; as near as we can figure, it is two and one-half parts alfalfa, two parts shorts and one-half part mixed chop.

This is put in a tub and water or swill is put on it and then thoroughly mixed. Once in a while we add a little salt, also some charcoal. This is mixed a meal ahead and the pigs seem to relish it. After that is cleaned up we give them a drink, either water or milk. We prefer milk if we have it.

Some may wonder where we get our ground alfalfa. Well in the first place we have a chopper for grinding our grain and for this we have an attachment for grinding alfalfa. It is a small cutting box and shredder combined: the alfalfa goes into the hopper of the chopper and it is then forced into the plates with a screw which is operated by the same power as the grinder. The plates used for alfalfa have a narrower grinding surface than those used for grain. The ground alfalfa, when made into a mush for hens, makes one of the best green foods that can be got for them.

Regarding the profit that we have from this system of feeding we have found that we are able to clear half of the sale price.

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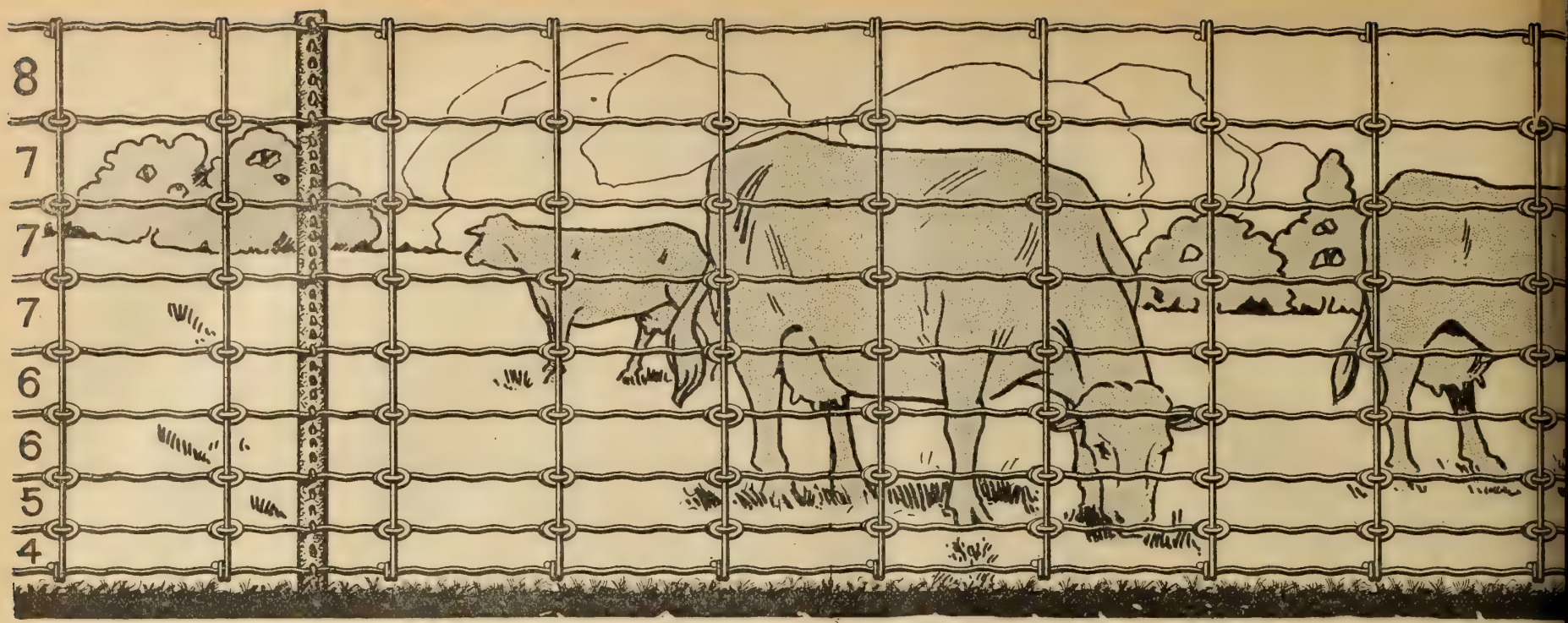
I very much enjoy your Farmers' Magazine *as it gives me great information along agricultural lines as well as general reading which I enjoy.*

John K. McLeod.



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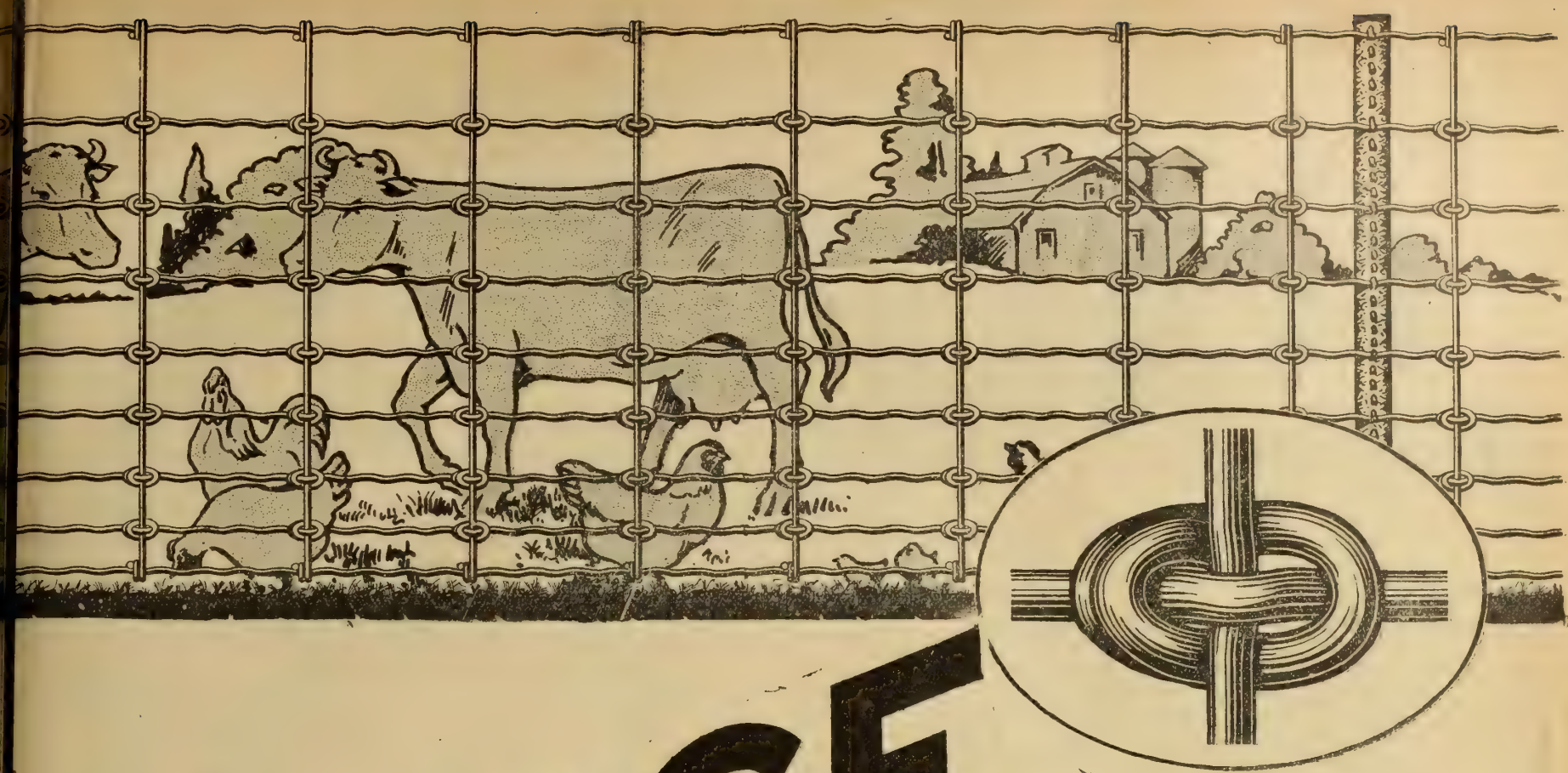

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Corn Culture in Ontario

By C. R. DENEAU

IN 1917 the corn crop stood third of all crops in acreage. It is cultivated for various purposes, according to the location in the province. Ontario being largely devoted to dairying, corn is chiefly grown for ensilage and for green fodder to be fed to cattle. In the south-western counties it is grown for grain and seed production.

A good corn crop is dependent largely upon the source of the seed. A crop from specially selected seed will often produce seven tons more of ensilage per acre than a crop from poorly selected seed. Many farmers do not realize the value of good seed. Why pay $3.00 per bushel for seed that will only produce five or six tons of ensilage per acre, when specially selected seed selling at $5.00 per bushel will produce twelve tons per acre, all other conditions being the same? This is the case on hundreds of Ontario farms. A difference of five or six tons of ensilage per acre is too great. The buying of cheap seed is not an economical proposition. The farmer should purchase his seed on the ear, so that he may know what type he is getting. He should be sure that it comes from reliable growers, that it is selected from extra good stalks grown under ordinary conditions, that it is well dried, and that it is tested before planting time. The farmer should beware of buying shelled seed of crib selection, that is not guaranteed or officially tested. Northern grown seed also produces a hardier strain than southern grown seed of the same variety.

The place in rotation of a corn crop bears a great significance to the yield. Corn responds readily to nitrogenous fertilizers, and to barn-yard manures. Care should be taken to grow corn after legumes or on ground heavily manured.

The soil should be deep, rich and fairly open, a sandy loam being preferable. It is necessary to have efficient drainage, for corn will not grow on low, wet lands. Wherever possible, fall plowing for corn should be practised, for the following reasons:

1. Fall plowing admits atmospheric oxygen, and increases chemical action upon vegetable and mineral matter, thus making plant food more available.
2. More heat is conserved, allowing the surface to dry earlier in the spring, still allowing only a little evaporation of moisture, as the sun's rays are absorbed in warming up the seed bed.
3. It conserves more moisture, because more can enter the soil when it is in a loose condition.
4. Fall plowing helps to control cutworms and white grubs.

The seed bed should be deep and well cultivated. Rolling of the ground before planting is not advisable, as it packs the soil too much, causing rapid evaporation. It also results in the formation of a thick, hard crust if a heavy rain should follow planting.

When to Plant

Corn should be planted as soon as the ground is sufficiently warm to produce rapid germination and plant growth, usually sometime between May 10 and June 1. Corn should be sown in rows, either drilled, or planted by the check-row system, according to the purpose for which the crop is intended. If grain production be the object, it should be planted in check rows, allowing thereby better cultivation and more complete eradication of weeds. The corn is of better quality and will mature earlier from the check-row system of planting. When ensilage production is the object of growing corn, it is often practicable *to drill in rows, as experiments show that nearly a ton more per acre can be produced from this system.*

The majority of Ontario farmers still drill their corn with a grain drill. However, the use of a corn planter is more economical, as it does better and cheaper work. The corn is planted more evenly in the row and the distance of the grains in the row can be better regulated. The wear on a planter is less than on a grain drill, and, as a grain drill is much more expensive, this extra use should be avoided. The corn planter is a lighter machine than the drill and, thought only drilling two rows at a time, more acres can be planted per day, for, on account of the lightness of the draft, the speed of the horses is increased.

If the early, vigorous growth of a corn plant is checked, it can never fully recover. Early cultivation is necessary to prevent the growth of weeds and the crusting of the soil. Deep cultivation should be practised during the first of the season, gradually becoming shallower as the season advances.

A mulch should always be kept on the surface to prevent evaporation. As soon as the surface appears moist it should be stirred, and also as soon as dry enough after every rain. Corn is usually cultivated to advantage with a two-horse cultivator. This should be used until the corn is too high for convenient work; then a one-horse cultivator should be used until the ears begin to form. Weeds not cut by the cultivators should be removed by hoes.

Corn for ensilage should be allowed to mature until the grain is in a doughy or glazed stage before cutting. When it has reached this stage the corn is cut with a corn binder or by hand, and hauled to the ensilage cutter before it is allowed to dry out to any extent. Always aim to cut the corn before frost, as freezing makes the leaves bitter and unpalatable to livestock.

Cutting the Corn

If the corn is being cut for grain production, it should be left until the husks begin to dry and the corn is hard. If cut with a corn binder it should be tied in small bundles and set up in small shocks. All ears that are knocked off by the machine should be picked up by hand. When the corn has been cut two or three weeks it may be husked.

When seed is to be selected, it is advisable to make the selection in the field before cutting. Go through the field and choose desirable ears that are of medium height on the stalks and growing under ordinary conditions. When you get a typical ear by such selection, you know that it has some good hereditary qualities. The ears should be typical to the variety, with the tip and butt ends well filled. The kernels should be in straight, uniform rows. These ears are placed on drying racks and heated slowly until all the moisture is driven out. The early selection and drying of seed before frost results in a higher germinating power. Make germination tests before planting or selling seed. Then advertise it and be perfectly honest in your sales.

Some varieties of corn are only suitable for certain localities and for certain purposes. For grain production in Southern Ontario, Wisconsin No. 7, White Cap, Yellow Dent, and Bailey, give best results. For grain production in Central Ontario, the flint varieties, such as Compton's Early, Salzer's North Dakota, and Longfellow, give good returns. As the flint varieties produce many suckers, the following dent varieties: Bailey, White Cap, Yellow Dent, and Wisconsin No. 7, are preferable for ensilage throughout Ontario. The earliest strains of all varieties should be obtained.

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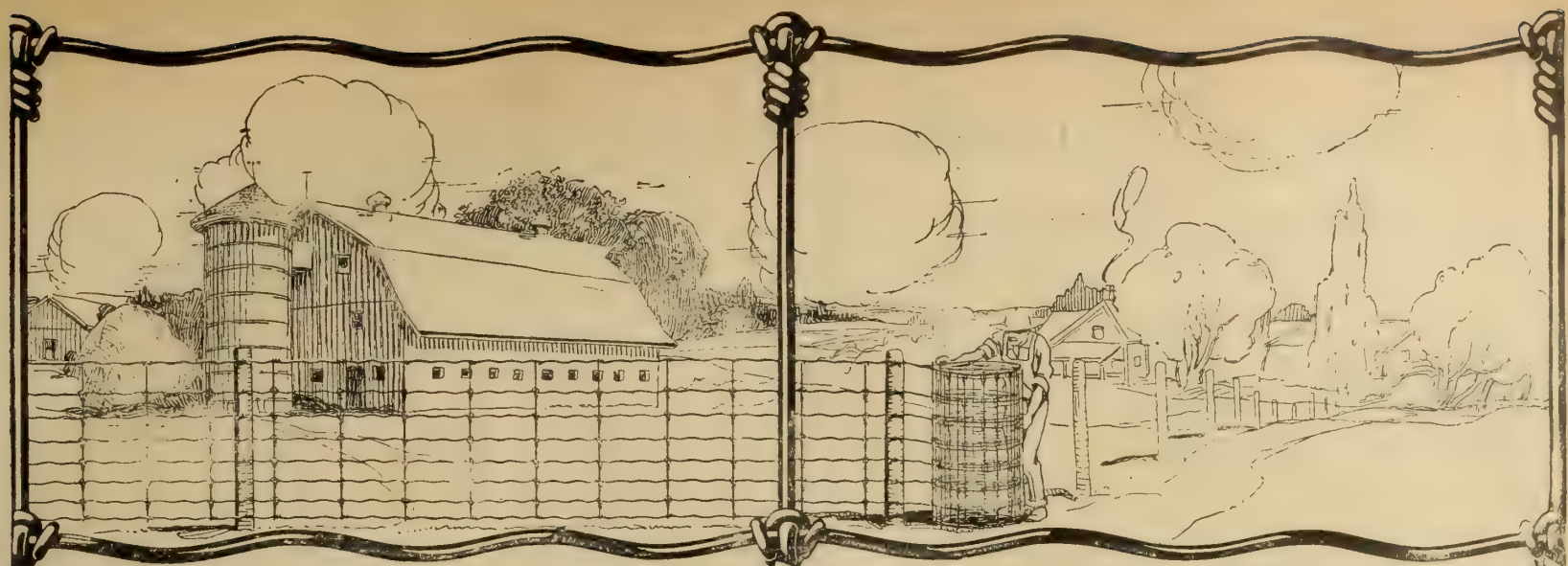
JUDGING from inquiries received at the office here, anyone who had beans to sell could have sold hundreds of bushels to our Western readers, all of whom wanted beans. Why do not our farmers use business methods more and advertise their goods for sale where the people who want them can see them? A small liner ad., 5 cents a word, would have told the tale.



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The "Farmers Magazine"
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ATT. MR. J. McGOEY - MANAGER

Gentlemen,

Replying to your enquiry of the 10th inst., in which you seek our opinion of the "Farmers' Magazine" as an advertising medium, we hasten to reply that it has filled our expectations in every respect.

Our sales department report that the number of enquiries received to date of the 19th inst., is in the immediate neighborhood of 1300. and they are still coming, a few every day, from the Western Provinces and Eastern Townships.

You may rest assured that the data which we have been enabled to compile through your valuable medium, will be carefully preserved, and when it becomes necessary to procure a duplication of recent results, we feel that we cannot do better than call on the "Farmers' Magazine" to "Put it across".

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Are Our Dairy Associations Asleep?

By ALLEN GRAHAM

THE dairying industry in Canada is in a state of flux to-day; it is throbbing with energy as it never did before; high prices have developed it wonderfully along many new lines during the past four years of war; and a new day is dawning for the industry.

Just what this new day will bring is hard to say, and prophets are at a discount, but the industry sees the need for closer organization and preparation to meet changing conditions which may not be quite so profitable as the days of the past few years have been.

This is, in brief, an outline of the high lights of the present situation. When Food Controller Hanna forced oleomargarine upon the people of Canada it was done quickly, and without an opportunity for the dairy industry of Canada to have a hearing in protest of the proposed change, though it was asked for. Whatever else this did, it landed the creamerymen in particular plump up against the fact that the time had come when the dairy industry should be organized and armed to stand for its own protection.

This is more than a high-sounding phrase, and more than a mere generality. The creamerymen organized themselves into a little group from which the powers-that-be have probably felt more pricks of the goad than all the other dairy organizations combined. But they were a small faction, and for this very reason stood very much alone in the midst of a swarm of potential enemies.

And so, last December the initial steps were taken for the organization of a National Dairy Council, to weld the widely varying—and not always sympathetic, it must be confessed—interests that go to make up the dairy industry at large.

This lack of sympathetic interests in the various parts of the branches of the industry is a FACT. The United Farmers of Ontario hesitated to oppose oleomargarine very vigorously because they were opposed to the "protection" of a tariff wall, forgetting, for instance, how ready they were to avail themselves of the "protection" of Toronto's good police force when they conventioned in that city.

Milk producers failed to stand up very vigorously in the fight in question, because they sold their milk whole and did not bother divorcing the fat from the lean of it; cheese men could not get excited over it, because they were finding a ready market for their milk and getting the whey back for the hogs to get their front feet in it.

And yet the prosperity of the dairy industry depends upon the prosperity of each section. This is just a case in point.

It may be safely said that it was Hanna's oleomargarine that sent the dairy industry hunting for cover, and this, coupled with the peculiar conditions of the trade arising out of the war, has paved the way for such a general acceptance of the idea of the National Dairy Council, though no Solomon has yet come forth with means of raising the wherewithal to carry on the fight year in and year out as the battles come and go. That is yet to be worked out in detail.

While this is being written a spirited legal protest is being made against the proposed increase in express rates—a point on which the many branches of the industry meet on common ground, and the Council is providing the sinews of war with a rather small show of collateral behind it.

Great Changes Coming

While the National Dairy Council, now being ratified by the very various interests combined within its scope, is a new idea, and a commendable one, it is merely an index of the changes that are evident throughout the industry.

We have departed widely from the normal trend of events of pre-war days, when the progress of the milk from the foaming milk-pail to the consumer in our towns and cities or across the pond, was a routine affair. Then we had our cheese bulking large in our exports, and our butter exports slowly tending to the irreducible minimum There was some little export of cream and condensed milk. And when you have said this you had said about all that there was to be said.

But now! We have very respectable exports of butter and phenomenal ones of cheese. But we have much more. We have powdered and condensed and evaporated milk by the thousands of cases going out of the country. We have city milk buyers competing strongly with these condenseries, and last year we had the cheese-men limping along behind the lot of them.

Are Dairymen's Associations Stagnant?

It is only reasonable to look for new developments in the dairy organizations, adapting themselves to the new conditions. But we look in vain, very largely, if we look to the dairymen's associations themselves for any such sign of progress.

Recently the Eastern Ontario Dairymen's Association held its 42nd annual convention in Belleville, and the Western its fifty-second convention in London. At these conventions, both East and West, the suggestion was thrown out, very quietly and unostentatiously, that there was room for advancement, and avenues of activity opening out before the industry; *but there was no apparent effort made to follow or discuss them.*

When these associations were first formed it was, if one is correctly informed, to establish better methods in the cheese factories. The dairy schools have taken up quite a bit of the work in the East, as one speaker at Belleville made remark.

Inspection work is carried on by the associations, too, but this is practically a Government affair, and scarcely the accepted work of an organization of this sort. For instance, ice-cream manufacturers are eligible for membership in the organization, one of the main duties of which is sending men about the country to see that the manufacture of cheese is carried on properly.

Or, farmers have membership in the organization which employs a prosecutor to see that milk is not tampered with and money collected by zealous disciples of the pump handle.

Silence in the East

At Belleville J. A. Ruddick urged that the Eastern Association should take up the cooperative marketing of cheese—and was greeted with silence. Hon. T. A. Crerar urged that farmers' organizations should cut themselves adrift from Government grants and should stand alone, allowing themselves to be under compliment to no Government. He was greeted with a deep silence; and this utterance would have almost lifted the roof at a United Farmers' convention. (Unfortunately Cabinet ministers do not as a rule frequent the U. F. O. conventions!)

This point that comes up here—and perhaps it is *the* point of the whole article—is this: The dairymen for forty-two years had been receiving Government grants to carry on their work. They have all this time been leaning on the Government, in no position to criticize, unable to work for their own advantage, and, if one is to interpret it aright, unable to do anything else than they do.

Initiative appears to be one of the last elements entering into the make-up of the Dairymen's Association—and this is said kindly. When Mr. Ayer of Montreal at the Napanee convention several years ago charged farmers who accepted a profit on their operations with taking "blood money," there was not a voice raised in protest against the charge.

When at the London convention recently Mr. Ruddick threw out a further suggestion, to the effect that the as-

sociation might collect facts as to the cost of producing the various dairy products, it was utterly without response, and he had to return to Ottawa without his ears being gladdened by one word of discussion, pro or con.

The reason for this is not alone the Government pap-feeding in the way of grants. In fairness to the Dairymen's Association it must be pointed out that within them are farmers, cheese-makers, creamerymen, milk condensers, ice-cream manufacturers, and even, one imagines, city milk distributors, as well as produce dealers and dairy machinery manufacturers.

There is an old and overworked saying that "what is everybody's business is nobody's business," and this probably holds true in the case of the Dairymen's Associations. It is not reasonable to expect farmers to be deeply worried over the cost of fuel to produce a pound of cheese, nor of cheese-makers to lose any sleep over the fact that garget causes a certain loss in the amount of milk produced by a farmers' herd when he is selling milk to a powder factory.

Might Have a Great Organization

In other words, the suggestion of Mr. Ruddick's, that in the National Dairy Council it might be possible to have a *separate* cheese section, a butter, a milk producers', a milk distributors', an ice-cream, and a condensery section, with more or less of a separate organization for each, and each to be represented on the council, indicated the weakness of the present composite organization.

The day seems to be past when Governments should have to go sponsor for the great and thriving dairy industry, and it seems quite safe to say that had the associations been paying their way from the start, instead of holding the itching palm out for Government grants, there would be a livelier spirit of independence and a greater readiness to grapple with perplexing questions as they arise.

Speaking at Belleville Hon. T. A. Crerar spoke a truth that is not always recognized when he said that one of the great benefits resulting from the wonderfully successful co-operative efforts of Western Canadian farmers was in the development of a deeper intelligence on the part of those taking part in them. No shareholders of any commercial concern could ever criticize the balance sheet of their company with greater intelligence or any more keenly that could the 35,000 members of co-operative enterprises in Western Canada.

Speaking, frankly, from his experience of one year in public life, Hon Mr. Crerar declared: "We are inclined too much as individuals to measure the value of a member of Parliament by the number of scalps he brings home in his belt after the session, in the way of grants and improvements to his own constituency.

"We must get a new conception of Government, and we must realize that the responsibility for the Government of the country rests upon the shoulders of every citizen in a democracy."

BEEF CATTLE

THE beef cattle business in Canada has been fostered greatly during the war. Not only has the pure-bred business benefited greatly but the ordinary feeder game has been almost a sure source of revenue for farmers everywhere. Now with the peak of prices reached, there will be a gradual adjustment but there are no signs of any abrupt movements.

A glance at the registration figures will show that the Angus have made the greatest per cent. gain of the three leading breeds, but Galloways have shown some unusual registration activity. Shorthorns lead all others. Herefords are growing in favor commercially as will be noted in George K. Miller's comprehensive article on another page.

BEEF CATTLE REGISTRATIONS.

Breed.	1914.	1917.	1918.
Shorthorns	10,786	16,863	17,409
Herefords	2,543	5,353	5,228
Angus	1,541	2,567	3,841
Galloway	91	19	111
Red Polled	102	331	294

BEEF CATTLE AND YOUNG STOCK IN CANADA.

Provinces—	1914	1917	1918
P. E. Island	61,048	54,970	69,029
Nova Scotia	148,268	135,046	249,422
N. Brunswick	99,256	89,456	166,624
Quebec	625,958	535,693	1,235,819
Ontario	970,445	865,847	1,770,683
Manitoba	251,996	239,205	521,240
Saskatchewan	474,436	573,411	926,342
Alberta	633,032	721,067	1,362,880
Br. Columbia	99,001	110,318	195,165
Canada	3,363,531	3,325,013	6,507,267

It will be noted that the increases are marked that one will wonder at the tales of meat shortages. Here again, the reason lies in the new system of reporting by provinces that has been more thorough.

Some facts, though, stand out. Alberta has more than Quebec, although Quebec's milk cows bring her total cattle census higher than Alberta's. Saskatchewan has more horses than cattle if you will note the tables. Here is a big field for expansion of the cattle trade and it is coming:

U.S. CATTLE MARKETS

	1918	1917	Inc.
Chicago	4,447,689	3,820,271	627,418
Kansas City	3,319,500	2,902,253	417,247
Omaha	1,993,366	1,719,822	273,544
St. Louis	1,509,409	1,404,641	154,768
St. Joseph	869,888	670,167	199,721
Sioux City	717,584	706,728	10,856
St. Paul	1,430,408	1,197,129	233,279
Denver	728,268	653,377	74,891
Ft. Worth	1,667,999	1,955,470	.....
Buffalo	444,629	418,267	26,362
Totals	17,128,740	15,448,125	1,968,086

Net Increase 1,680,615 (10.87%).

CANADA'S CATTLE EXPORTS

To—	1914.	1917.	1917.
Great Britain	9,778	.....	not given
United States	206,456	164,169	"
Other countries	3,517	2,067	"
Totals	219,751	166,236	146,038

A WATER FINDER

J. D. T., Alberta, writes that he has used a water finder manufactured in England and has had fair success with it. The instrument is a delicate one and must be handled with great care to get best results. He has had it 8 years and has located a great many wells. It is very expensive, he says, and needs a lot of practice in operation as there are so many conditions to affect its workings. Several Western correspondents have asked about this since it was first mentioned a few issues ago.

Another reader from Clan William, Man., writes that the instrument for locating running underground water is the Mansfield Water Finder, made at Liverpool, England. It is in a neat hardwood case, 8 in. square, with glass top; has two indicating arrows and a compass for setting; has three polished hardwood legs to set the instrument on and also instruction book for operating it. It has a neat leather case which it fits in when not in use. It will locate water down to 200 ft.

GETTING INTO PURE BREDS

ANY farmer who will start with one or two pure-bred females and keep the female increase will in the course of four or five years have a very valuable herd that has cost practically nothing but their keep. The bulls which come along from year to year will sell for more money than grades will sell for and the heifers will take the place of the grades which ordinarily the farmer has been raising. The sales should be made from the grades and in a short time only the pure breds will remain on the farm.

This is an easy way to get started with pure bred Shorthorns and the profits are certain to be much larger than in raising grades. It doesn't require any better care to grow pure-bred Shorthorns than ought to be applied to the raising of grades, but the better the care the better the results with both. It is the man who cares for his stock that realizes the best results and the largest profits. Raising livestock isn't an endurance contest. It is an effort to get the largest development and profit for the amount of investment, in feed and maintenance. That is why the pure bred makes the best showing.

What is an Internal Bath?

By R. W. BEAL

Much has been said and volumes have been written describing at length the many kinds of baths civilized man has indulged in from time to time. Every possible resource of the human mind has been brought into play to fashion new methods of bathing, but strange as it may seem, the most important, as well as the most beneficial of all baths, the "Internal Bath," has been given little thought. The reason for this is probably due to the fact that few people seem to realize the tremendous part that internal bathing plays in the acquiring and maintaining of health.

If you were to ask a dozen people to define an internal bath, you would have as many different definitions, and the probability is that not one of them would be correct. To avoid any misconception as to what constitutes an internal bath, let it be said that a hot water enema is no more an internal bath, than a bill of fare is a dinner.

If it were possible and agreeable to take the great mass of thinking people to witness an average post mortem, the sights they would see and the things they would learn would prove of such lasting benefit and impress them so profoundly that further argument in favor of internal bathing would be unnecessary to convince them. Unfortunately, however, it is not possible to do this, profitable as such an experience would doubtless prove to be. There is, then, only one other way to get this information into their hands, and that is by acquainting them with such knowledge as will enable them to appreciate the value of this long-sought-for health-producing necessity.

Few people realize what a very little thing is necessary sometimes to improve their physical condition. Also, they have almost no conception of how little carelessness, indifference or neglect can be the fundamental cause of the most virulent disease. For instance, that universal disorder from which almost all humanity is suffering, known as "constipation," "auto-intoxication," "auto-infection," and a multitude of other terms, is not only curable but preventable through the consistent practice of internal bathing.

How many people realize that normal functioning of the bowels and a clean intestinal tract make it impossible to become sick? "Man of to-day is only fifty per cent. efficient." Reduced to simple English this means that most men are trying to do a man's portion of work on half a man's power. This applies equally to women.

That it is impossible to continue to do this indefinitely must be apparent to all. Nature never intended the delicate human organism to be operated on a hundred per cent. overload. A machine could not stand this and not break down, and the body certainly cannot do more than a machine. There is entirely too much unnecessary and avoidable sickness in the world.

How many people can you name, including yourself, who are physically vigorous, healthy and strong? The number is appallingly small.

It is not a complex matter to keep in condition, but it takes a little time, and in these strenuous days people have time to do everything else necessary for the attainment of happiness but the most essential thing of all, that of giving their bodies their proper care.

Would you believe that five to ten minutes of time devoted to systematic internal bathing can make you healthy and maintain your physical efficiency indefinitely? Granting that such a simple procedure as this will do what is claimed for it, is it not worth while to learn more about that which will accomplish this end? Internal bathing will do this, and it will do it for people of all ages and in all conditions of health and disease.

People don't seem to realize, strange to say, how important it is to keep the body free from accumulated body-waste (poisons). Their doing so would prevent the absorption into the blood of the poisonous excretions of the body, and health would be the inevitable result.

If you would keep your blood pure, your heart normal, your eyes clear, your complexion clean, your head keen, your blood pressure normal, your nerves relaxed, and be able to enjoy the vigor of youth in your declining years, practise internal bathing and begin to-day.

Now that your attention has been called to the importance of internal bathing, it may be that a number of questions will suggest themselves to your mind. You will probably want to know WHAT an Internal Bath is, WHY people should take them, and the WAY to take them. These and countless other questions are all answered in a booklet entitled "THE WHAT, THE WHY and THE WAY OF INTERNAL BATHING," written by Doctor Chas. A. Tyrrell, the inventor of the "J.B.L. Cascade," whose lifelong study and research along this line make him the pre-eminent authority on this subject. Not only has internal bathing saved and prolonged Dr. Tyrrell's own life, but the lives of multitudes of individuals have been equally spared and prolonged. No other book has ever been written containing such a vast amount of practical information to the business man, the worker and the housewife. All that is necessary to secure this book is to write to Dr. Tyrrell Hygienic Institute, Suite 355, 163 College street, Toronto, and mention having read this article in FARMERS' MAGAZINE, and same will be immediately mailed to you free of all cost or obligation.

Perhaps you realize now, more than ever, the truth of these statements, and if the reading of this article will result in a proper appreciation on your part of the value of internal bathing, it will have served its purposes. What you will want to do now is to avail yourself of the opportunity for learning more about the subject, and your writing for this book will give you that information. Do not put off doing this, but **send for the book now**, while the matter is fresh in your mind.

"Procrastination is the thief of time." A thief is one who steals something. Don't allow procrastination to cheat you out of your opportunity to get this valuable information, which is free for the asking. If you would be natural, be healthy. It is unnatural to be sick. Why be unnatural, when it is such a simple thing to be well?

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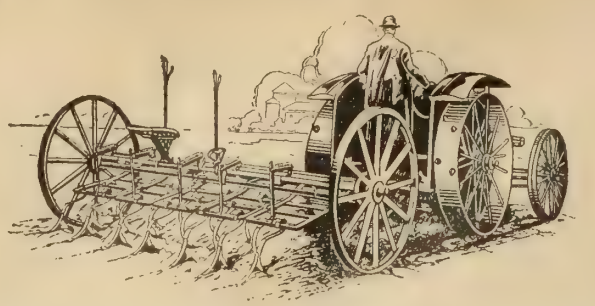

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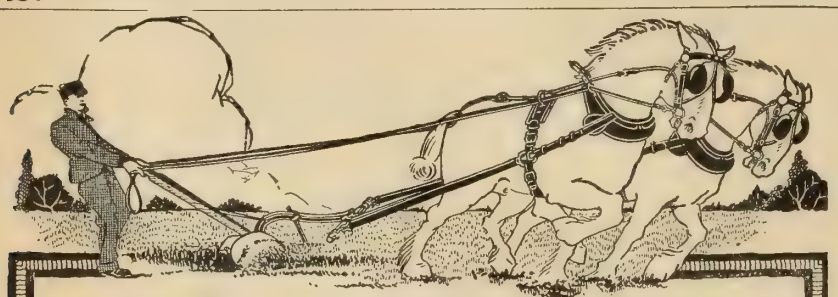

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Tomatoes Clear $117 per Acre

By V. A. ALEXANDER

ANNUALLY throughout the Dominion of Canada, thousands of acres are set aside for the growing of tomatoes. In Ontario the tomato industry is growing, millions of bushels being used for canning and catsup purposes. Tomatoes have become a popular delicacy in many foreign countries. The canned tomatoes and catsup sold throughout the Dominion and other parts of America represent a very large sum. The reason that tomatoes have become so popular a food, is because they can be grown successfully without any great amount of labor, and the profits obtained are fairly large. In the tomato districts in the United States, some growers average between 1,000 to 2,000 bushels of fruit to the acre. This year tomatoes sold as high as $2.00 per basket for early No. 1 marketable fruit, and the canners, for the later field-grown tomatoes, gave the sum of 50c per bushel. The counties of Essex and Kent in Ontario make a specialty of growing tomatoes for the canning factories. The following figures will show the profits made from an acre of tomatoes grown for this purpose:

Cost of 3,000 plants at $8 per 1,000	$24.00
Cost of cultivation of ground	6.00
Cost of fertilizers	10.00
Cost of planting, hoeing, etc.	17.00
Cost of hauling	10.00
Total expenses	$83.00

The average yield from an acre of field tomatoes is 400 bushels. Canner price per bushel of tomatoes equal 50c for season of 1918.

Cost of 400 bushels	$200
Expenses	$ 83
Clear profit per acre	$117

All our Ontario, and other provinces of the Dominion, growers have realized great profits in tomato growing. A grower in 1917 in Humber Bay district, from highly fertilized land, received the following results from ¼ of an acre of tomatoes planted 5 by 3, and staked up to 1 stem. Harvesting time started 3rd of August, ended 5th of October. The yields were 1,608—11 quart-baskets, sold at the rate of 40c per basket. Figuring on an acre, he would receive 4,032 baskets, which equals 1,344 bushels per acre. Revenue was $1,612.80 per acre. The expenses of growing the plants under glass and intensive cultivation in the field are of course not reckoned here.

All over America growers are making large profits in tomato growing. If a man has good markets for his fresh, early tomatoes, it pays him better to basket his fruit and sell directly to the markets.

The market quotations in 1918 for early fresh fruit per basket were $2.00, and the lowest prices paid when tomatoes were plentiful was $1.00.

Culture of the Tomato

The tomato is adapted to a variety of soils, but, like other vegetables, there is one kind of soil which suits it best, and that is a warm, rich, moist, sandy loam, with a well drained, clay subsoil. The land should be heavily manured if a previously cropped field, and ploughed in the fall of the year, but if it is clover sod that is being turned under, fertilizer can be added to the soil in the spring. The land should also be deeply disked, followed by the drag harrow and finally rolled. The soil in this condition is fit for planting. The grower may propagate his plants by first planting his seeds in hot-bed and then transplanting into plots. In a great many cases, the growers transplant directly into ordinary strawberry boxes, allowing one plant to each box. The plants handled in this latter way, receive plenty of room for development. In most cases, after a few weeks' growth, and if allowed to harden off in cold frames, they become strong and sturdy plants.

Field Planting Methods

A question that rests with the grower is the field planting of these plants. The planting can be done in several ways In Western Ontario, where this crop is grown extensively for the canning factories, the plants are handled with a regular planting machine. Another method of planting is by first marking the plot off with an ordinary three-toothed marker. The teeth are spaced the distance the plants are to be apart. This marker is pulled lengthwise and crosswise on the field, marking the field into squares, the plants being set where the marks cross. The plants which are handled in berry-boxes are lifted from cold frames and placed in the spots marked out. The trowel is used for making holes, which should be 4 in. to 6 in. deep. The berry boxes containing the plants are carefully broken away so as not to disturb the roots. The plants are set firmly in the ground.

The time of planting should always be considered, since there is danger of frost if planted too early. The time of planting is determined by the district you live in. In Northern Ontario plants can be planted out the first week of June, and in Southern Ontario it is safe to plant out by the 24th of May. A tomato plantation should be thoroughly cultivated. A horse cultivator should be run through a plantation twice a week. The plants should be also thoroughly hoed by hand. A mulch on the soil is required to conserve the moisture, and helps greatly in assisting plant growth. The rows should be kept clear of weeds and, as plants approach bearing time, cultivating should cease.

Varieties and Yields

The subject of variety of tomatoes has been much discussed. Some growers claim a certain variety of tomatoes is the best, but I think, myself, that the climate has a great deal to do in determining what variety you should grow. First, if you live in Northern Ontario, you will require a hardy tomato, one in which the fruit will ripen nearly all in the month of July and August. From experiments conducted the "Alacrity" tomato is best suited for that climate, and in Southern Ontario, varieties not so early and not quite so hardy are recommended, such as the Matchless, Chalk's Early Jewel, Ignotum, etc.

The staking and training of tomatoes to a single stem, greatly increases the yield per square foot, gives early fruit of high quality, and decreases injury from rot. This system is advisable for home use and, in some cases, for market plantations.

KOHL RABI—A CHOICE VEGETABLE

By W. D. ALBRIGHT

KOHL rabi, that peculiar turnip-cabbage with a Yiddish-sounding name, is a vegetable whose merits should be much more widely known. Out of several of the less common garden crops, including Brussels sprouts and Swiss chard, grown in our experimental garden last summer, it is the only one we would recommend without qualification to the busy farm-gardener. The others are all right in their way but not to be compared to kohl rabi from the standpoint of general utility. Few farmers can afford to fuss with a long list of novelties, but the one we are discussing deserves a place among the staples.

Kohl rabi, alias kale cabbage, is a green turnip-shaped bulb which grows just above the ground on a shorter stalk than cabbage. The texture of its flesh resembles the heart of a cabbage. In flavor it is a blend of cabbage and turnip, with an elusive suggestion of the cocoanut, whose texture it also reminds one of. When over-mature, it becomes fibrous, even woody, this condition commencing at the base and extending upwards. It should be eaten when fairly young, and any not used in time should be gathered regularly to prevent the development of this fibrous character. Occasionally kohl rabi has been condemned by new growers who have simply made the mistake of allowing it to become over-mature. Specimens which have been left too long may still, in some instances, have the upper por-

tion fit for table use. The remainder, thrown to the chickens, will be picked out by them with a relish greater than they exhibit for any other vegetable I know of. A neighbor informed us last summer that he always grows a surplus of kohl rabi for his chickens. He simply bisects and throws them into the poultry yard. The birds eat out every scrap of flesh, leaving only the rind. We tried the plan and confirm his statements unreservedly.

I cannot speak positively of the keeping qualities of this vegetable. In our climate, judging from a single season's experience, it seems to retain its virtue fairly well for some weeks at least. It has a tendency to become pithy.

"To cook," the ladies say, "cut into small cubes and cream as one would cabbage or cauliflower." That is all I know about that part of it. I do know that it makes a most delicious dish, being preferred to cauliflower by our family and by many others who have given it a trial.

It appears to be a hardy, prolific vegetable and its culture is easy. I quote from an Ontario bulletin on Vegetable Gardening, by S. C. Johnston, B.S.A.

"Soil.—Rich garden soil is best for this crop. Heavy soil will produce woody plants.

"Planting and Cultivation.—The seed should be sown in rows the same as carrots or beets. Successional planting ten days or two weeks apart gives best results. Cultivate as for other root crops. Thin to 6 to 8 inches apart.

"Harvesting.—Kohl rabi really is a turnip growing on top of the ground and should be pulled and trimmed as soon as ready. Kohl rabi will become pithy if left in the ground too long and for this reason should be harvested regularly.

"Marketing.—These plants usually are sold in bunches of three with the tops left on."

In 1918 at the Experimental Station, Beaverlodge, we found that as with cabbage and cauliflower, we had poor results from sowing the seed in the open, owing to the unfavorable weather of last May. The best of success, however, attended the culture of plants of all these vegetables started in the hotbed and transplanted in June. The growing season from the end of May onwards was most propitious, with frequent showers. Possibly in a very dry season the texture and flavor might not prove quite so satisfactory, but at all events we expect to continue kohl rabi as a regular addition to our vegetable garden, and advise others to give it a trial.

THE LABOR IN RAISING ONIONS

By F. B. Housser

THERE are, I know, those who contend that the ordinary farm soil cannot be made to produce profitable crops of onions. I think we have proved this theory unsound on our truck farm in Pickering.

Our soil is an ordinary, high quality clay loam. The natural drainage is excellent and has been supplemented by a few tile drains in the low or springy places. The land used last season was ploughed down from old sod in 1915, but twitch-grass grew in 1916. An excellent crop of potatoes, a few onions and some poor-grade turnips were harvested in 1917. A good coat of well-rotted manure was applied in the fall of both 1916 and 1917.

Last spring we planted four acres in Yellow Globe Danver onions. They were sown with a single row, seeded in drills fifteen inches apart, the chief object being to have a level, well-pulverized seed bed.

On the ordinary farm this can be done with a disc harrow and a home-made planker, consisting of five or six 2 x 10 inch planks nailed together so the edges overlap one another not more than two inches. Your own ingenuity can contrive the most practical means of attaching the whiffletrees.

Drive this planker lengthwise of the furrows. Now follow this with the disc harrow cutting fairly shallow, and keeping lengthwise of the furrows. Drag again *across* the disc marks and continue these two operations until your bed is ready. It should not be loose deeper than 1½ inches. The bottom should be firm and the seed (in clay loam) is planted one half inch deep.

In two weeks at the outside, you should be able to see the rows plainly enough to cultivate. Here is where a stitch in time will save nine hundred.

Using a double wheel hoe you set the side hoes to straddle the row with an allowance on either side of about ¾ of an inch. If you find you are burying the young seedlings, make a pair of tin shields similar in shape to the shields on a corn cultivator. These, you will find, are a great help and allow you to work faster. We used a garden tractor for this operation and if you once use one you will never go back to the wheel hoe.

About one month from seeding time the first hand weeding operation begins. The season's crop will depend on the promptness with which this work is done. It is the hand weeding that prevents many a would-be-onion grower from having a patch.

The help problem for this operation we solved last year through the principal of the village public school At my request he announced in class that to any boy or girl who would go after school and weed onions, Mr. H. would pay ten cents a row. I might explain here that our standard row consisted of 415 feet. That night I turned boys away. The patch was cleaned up before dark. The cost was a little over $15.00 per acre, war prices.

If the patch is properly cultivated, and a well kept hoe crop has occupied the land immediately prior to the onions, two weedings should be sufficient. The second weeding comes when the onions are six to eight inches high and after this you can breathe more freely.

Stop cultivating soon after the bulbs begin to form. If you continue cultivation too long you will cut the roots, which spread, sometimes, four inches out into the rows. Never cultivate too deeply at any time.

When the tops go brown and fall over it is time to harvest. If onions are allowed to remain in the ground too long after they are ripe a second growth will commence, the bulbs will soften and their keeping qualities will be greatly impaired.

The usual method of harvesting is to pull by hand, throwing four rows into one. With our garden tractor we scoop the bulbs out with a "U" shaped knife made for pulling sets. Some boys with wooden rakes pull the four rows together and the job is finished.

I do not know how long it requires for ten boys to harvest an acre of onions. With the tractor we can get over an acre a day and take some rests in between. Three boys with rakes follow the machine.

The ordinary farmer would not have racks on which to dry the crop. A week on the ground with good weather and occasional rakings will put the onions in shape for topping. Scissors are the most practical topping tools on a small acreage. We use a gasoline power topping machine which tops, grades, cleans and bags in one operation. Three men can put through from three to four hundred bushels in a day.

On the two acres which were manured we harvested 1,100 bushels. On the two unmanured acres prepared with commercial fertilizer we got 700 bushels. This is a total yield of 1,800 bushels or 1,200 bags, which sold all the way from $1.00 to $2.75 a bag on the glutted market of last fall.

The five main points to remember in growing onions are these: 1. Test your seed before planting to insure an even stand. 2. Aim to have a powdered seed bed. 3. Plant early. 4. Weed and cultivate promptly. 5. Dig before a second growth sets in.

AN AYRSHIRE PICNIC

The Howick-Huntingdon Ayrshire Breeders' Association are preparing for a field day during the latter part of June, where there will be an Ayrshire demonstration, making it an educational as well as social event.

Mellow Soils Best for Growth

A HARD-CRUSTED soil surface excludes the air, drys out the soil and dwarfs the crop. Any soil, no matter how hard or dry, can be made into a good mellow seed-bed with a Peter Hamilton Stiff Tooth Cultivator. The tender seedlings or young plants push their way more easily through a mellow soil than through a stiff and cloddy one.

Peter Hamilton Stiff Tooth Cultivator

is exceptionally good for breaking up land or for summer fallow. The frame is thoroughly braced and trussed, which gives it extraordinary endurance for deep cultivation in the hardest kind of soil.

Deep cultivation is now advocated by agriculturists and for this work and killing weeds the Peter Hamilton Stiff Tooth Cultivator is unequalled.

The relief spring is the most successful yet used. After a stone or other obstacle is passed the foot flies back automatically into place again. The foot can be set forward to work into the hardest land. You can cultivate just as deep or just as shallow as you like.

Any width of thistle or weed cutters can be had. One set is supplied with every machine. You need the help of a Peter Hamilton Cultivator for your field work. With it you can prepare the best seed-bed and get increased crops. Don't put off buying. Write us to day.

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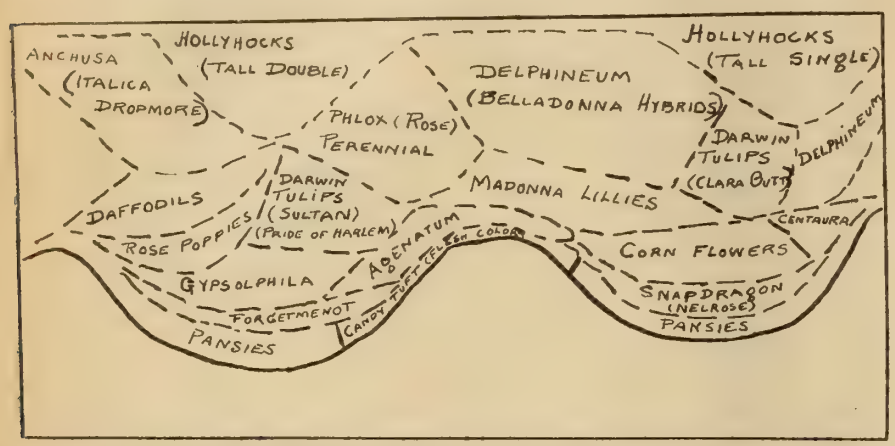
Vegetables, Flowers and Trees for the West

By ALLEN CAMPBELL

ONE of the best means of helping a settler to take root in a new country is the possession of a successful garden. Once some of the flowers and vegetables of his earlier days start to appear around his house he then feels that he has established a strong link with old associations. A garden embellishes a home to a great extent and serves to ensure contentment and permanence.

In the West we see each year additional triumphs in horticultural effort, and, from the once so-called "frozen waste," is developing a land of great opportunity in the raising of vegetables, flowers and fruit. Hardy stock from the East, the Old Land and the United States has proven a good immigrant, and we, of other lands, are gradually building up a home away from home. The present abnormal food conditions have elevated the potato to a place of high regard, and, from the humble garden patch, it has taken its place as an important field crop.

The advance of horticulture in the West has been given a great impetus by the indefatigable energies of the various Horticultural Societies, and by enthusiastic lecturers travelling from point to point. The possession of a good garden places one in a certain position of independence and it becomes, as it were, a second line of defence to the field crops. Storage is a question of the present moment, and when root cellars are in general vogue the self-supporting capabilities of the Western farm will be greatly enhanced.



The plan of Mrs. Housser's flower garden, omitted from her story in the March 15th issue, which see for particulars of how she made flowers pay.

Varieties of Vegetables

Experimenters have given time and money to ascertain the most suitable varieties for Western conditions, and after some years of testing there are several varieties now found to be worthy of recommendation for the average season. The following list may prove a useful guide to those who intend to take gardening seriously:

Onions

Large Red Wethersfield
Danvers Yellow Globe
Extra Early Red
Yellow Globe
Red Globe
White Globe

Peas

Early Pilot
Gregory Surprise
Thomas Laxton
Sutton Excelsior
Rivenhall Wonder
American Wonder
Gradus
Premium Gem
Stratagem
Telephone

Tomatoes

Earliana
Chalk Early Jewel

Potatoes

Wee McGregor
Empire State
Early Bovee
Early Ohio
Hamilton Early

Cabbage

Early Paris Market
Copenhagen Market
Early Jersey Wakefield
Kildonan

Carrots

Half Long Chantenay
Improved Nantes

Corn

Golden Bantam
Early Malcolm
Fordhook Early
Pocahontas
Squaw (for earliness)
Malakoff (medium early)

The Value of Flowers

Flowers are an essential to the farm home as they are to the refining influence that goes to balance farm life. It is better to handle a few well-chosen groups than to aspire to make a big display of promiscuously mixed colors. A rotation of bloom should be the aim, one that will start early and last the greater part of the season. Irises are hardy, need no winter protection and give a fine display of bloom. The roots rapidly increase in number and this increase may be taken for the purpose of starting fresh plantations each spring. A border of irises interspaced by peonies will prove a good combination, for as the irises die off the peonies will take up their task of beautifying the home and will usually be found to be at their best about the last week in June.

A few annuals are a good addition to a flower-garden and among the most satisfactory are Sweet Peas. The following varieties have been found to be of outstanding merit:—

Mrs. C. W. Beardmore (creamy white, pink edge).
Elfrida Pearson (salmon pink)
Charles Foster (pink, mauve and rose)
Nora Unwin (pure white).
Rose du Barri (rich rose).
Lady Grisel Hamilton (pale lavender).
Queen Victoria (primrose).
Decorator (rose, salmon shade).
Captivation Spencer (red, tinged purple).
Florence Nightingale (deep lavender).

The Sweet Pea has undergone great development, and from insignificant blooms have been evolved the magnificent, delicately tinted and fragrant blooms of today. They furnish a very pleasing vase bouquet and a house may be made much more cheerful by their presence. A good point about them is that they have a very abundant supply of bloom, and it is advisable to pick them frequently as it benefits the vines to do so. They need strings to climb by, and by having stakes with strings between they will form a gorgeous hedge.

Roses are extremely attractive and have always been popular favorites throughout horticultural history. There are several varieties that have won favor in the West and among these one may mention such varieties as Paul Neyron, Mrs. Cornwallis West, New Century, Magna Charta, Frau Carl Druski, Persian Yellow, Mrs. Anthony Waterer.

Trees for the Western Farm

In taking up the subject of trees, one cannot speak too greatly in their favor. They are our permanent neighbors and should be chosen with care, for it is a great loss of time in getting a good plantation of trees if one's choice changes after they are started in vigorous growth. Trees, in addition to being beautifiers of the home, are defenders against the elements and, therefore, should be planted with a certain amount of strategy to contend with wind and drifting snow. There are so many good kinds that it is hard to be brief in giving a selection. Some of the following have proven a great embellishment to the farm homes of the West:

The Caragana is hardy, handsome, and makes a tight hedge. As its name implies, it is an importation from Russia, the first seed coming to Ottawa from that country in 1887. It can be classed as an old reliable. A hedge of outstanding beauty is the Ginalian Maple, the leaves of which turn a rich red in the fall. The willows are quick growing and provide a hedge at comparatively short notice. The Laurel Leaf Willow with its shiny green leaves has a very pleasing effect.

In planting individual trees it is not a good plan to plant them in too close proximity to each other, but, as in planning the flower garden, it is best to aspire to a perspective denoting quality rather than quantity. A home with a few well-selected trees surrounding it is better than one that appears to be in the midst of a miniature forest. Each tree should to a great extent harmonize with, and at the same time emphasize, its neighbor. A few White Birch afford a great relief to the general green surroundings. The Cut Leaf Birch with its graceful trailers is particularly handsome. The Mountain Ash will also prove very satisfactory in effecting color relief in the fall by its abundance of red berries.

A few evergreen trees are an essential to the Western home as they serve to countract the bleakness of the winter outlook and afford a good windbreak by the abundance of their foliage. The White Spruce is a good reliable evergreen and can be used in a hedge or as an individual tree. The Blue Spruce makes a fine ornament to the grounds both in summer and winter. The Scotch Pine is also a grand looking tree by which the home grounds may be enhanced.

It has been remarked by a tree enthusiast that "they will grow while you are sleeping." That is true, but it is not wise on the part of the owner of them to sleep too much of the time, as there is action needed in order to keep the moisture-robbing weeds away from the base of the trunks. A "no man's land" of two or three feet should be strictly observed round each individual tree where weeds should not be allowed to encroach, and in fact, with some trees this is a matter of life or death. In the case of hedges, a straight cultivated bed should be preserved each side to give the trees or shrubs every chance to justify the work of planting them.

Farm Manures and Their Uses

By ANDREW KYLE

THE farmer who feeds his soil feeds himself and the commonwealth Fertile fields are the foundation upon which he builds his prosperity. Without such a foundation the farmer is bound to fight a losing battle. As his fields become richer, he finds his bank account growing. Along with this need of fertility goes the other fact that soil fertility must be maintained as by-product, or a step backward must be taken. Artificial fertilizers have an important place to fill in field improvement, but that place is as an adjunct to barnyard manure, never as its substitute. The farmer who lives near a large town or city may procure manure at a small advance upon the expense of transportation, but this manure is used at the risk of adding noxious weeds to the fields thus fertilized. Soiling crops, like artificial fertilizers, serve as a valuable adjunct to the manure, but will never quite take its place.

Yet every year the average farmer loses a large per cent. of the fertilizing parts of his manure through improper handling. After every winter rain it is no unusual thing to see a stream of the very best of the manure hurrying off to the nearest creek, as if it were anxious to get away from the farmer, who was so slow that he did not appreciate its value. In the early spring, the manure pile smokes away its best money-making qualities as if in hot indignation, because it was not being set to work in a helpful manner. When the flooring is removed from some old stables a veritable mine of fertility is found to have soaked its way through badly-constructed floors. Hen pens and poultry yards and hog runs abound in manure that has been robbed of its finest properties through sheer neglect. No one can say what the amount of loss is that accrues from this source alone. It is a fact. however, that there is a crying need for reform in the matter of the care of farm manure.

Undoubtedly the best place to begin to care for manure is in the stable it self. The floor should be watertight in order that all liquid may be preserved. For this purpose no better material can be procured for floor construction than concrete, well made and well laid. The gutters behind the animals should be so constructed that they slope from both ends and towards the middle of the gutter. From this centre of the gutter a six-inch tile should conduct the liquid to a barrel or cement cistern outside the byre. Under cover and near the cistern there should be a cement bottom made, capable of draining itself into the cistern for catching the liquid manure. The foundation should be large enough to hold a week's make of manure. From time to time the cistern should be emptied upon this manure pile. At least every week the manure should be hauled to field, where it is to be used, and there piled in heaps about four feet wide and four feet high—and the longer the better. In this way time and energy are saved in the days when the rush of the spring work is on. In the byres, the gutter should be kept as full of litter or other absorbent as may be. When spring comes the barn should be clean of all but the straw and hay that are purposely held in reserve against the following season. The manure placed in the heaps in the field should be carefully built and tightly packed and tramped. This precaution will prevent heating and consequent loss.

Stop Leaching to Creek

The manure should be piled where any leaching from it will not find its way to the creek. The more strawy manure is best reserved for the top of the pile, where it serves as a valuable thatch. Hauling the manure to the fields serves to insure the regular cleaning of the hog and poultry pens and goes a long distance towards insuring good health among all the farm animals.

In the cases where the manure is kept for enriching the summer fallow of the fall wheat field a great deal can be done to prevent barnyard waste.

For one thing the drop from the eaves of the farm buildings must not be allowed to fall on the manure pile. Then all drains from the yard should be carefully closed up. The manure from the stable should be built into the pile as carefully as sheaves on a load of grain. Upon this pile of manure, clover, or other appetizing feed, should be scattered for the colts or the calves in order that the stock may have barnyard exercise. Where there are no colts the work-horses should be given a good run in the barnyard. Someway or other, the manure should be thoroughly tramped. When spring comes the manure pile should be well covered with straw. When these precautions are observed, it is astonishing how fresh the manure will keep till August or September.

Keeping It Near Surface

The keeping of the manure near the surface of the land is managed by some farmers by applying the manure after the hay has been harvested. By applying the manure at this period of the farm work the rains leach the manure into the roots of the hay, producing a luxuriant second growth in the meadow, to say nothing of sprouting the weed seeds. As soon as harvest is over the field is plowed and the roots and after-growth are ready to be made into humus, and at the surface of the field, where the richest soil is needed.

Not only is it important to preserve the qualities of winter-made manure, but the manure of the summer should be preserved as well. Manure is wasted in lanes and in milking yards that should be preserved for the fall wheat land or the summer fallow. This prevention of waste is effected by stabling the cows during milking and at night. This method has the advantage of securing the cows for the morning milking, much to the saving of temper and labor. Those who have never tried this saving will be astonished at the amount of first-class fertilizer they may secure by observing this precaution.

In cases where it is impossible under existing circumstances to avoid leaching from the barnyard, it is good prac-

tice to sink a large barrel where it may catch as much as possible of the bla stream as it runs away. A stone and a second barrel and a pail for ping purposes should be kept handy, and as much of the liquid manure as may be secured should be conveyed to orchard or garden or field. A prominent apple grower in Wentworth County was induced to try this practice. A row of trees running through the middle of the orchard was made the basis of the experiment for one season with such noticeable results that that particular farmer set a new value upon his liquid manure ever after.

In other words, the proper care of manure means an almost indefinite addition to the farm productiveness. The farmer who will shelter half his manure and care for it, as this article suggests, will find this part of his manure so much more valuable than the other part that he will be a convert to the better method of manure manufacture. Not only will the farmer find his fields made more fertile by this practice, but his premises will be blest in the summer time with a freedom from flies, diseases and pests that breed in uncared for manure.

OUR MIGRATORY BIRDS AND OUR LAWS FOR BIRD PROTECTION

ON a frosty morning in the early spring, just after the first brown patches of grass have appeared in the meadows, a joyous, warbling song is heard in the orchard. The singer is easily found—the first glimpse of that blue back, bluer than the bluest of summer skies, tells you his name—the bluebird. Then, with a flourish of one or both wings, he settles on a point of vantage and watches the ground below him for insect prey. The sunshine is already warming some of them to life for their careers of destruction, but the bluebird pounces again and again from his perch, and many insects are removed which, with their numerous progeny, would serve to lay waste and destroy the crops of field and garden.

The bluebird is but one of an army of migrants to follow. As spring advances they swarm in our shade-trees and hedges, and scatter over field and forest; even in the air they have their hunting ground; and almost without exception they are working in man's interest by holding in check the insect hordes which, if they held undisputed sway, would render man's agricultural efforts of no avail.

When man clears the forest and plants various plants for food he disturbs the complicated series of events known as the balance of nature. The insects often find his exotic vegetation more succulent and attractive than their native hosts, and transfer their attention to this new source of food. Certain of the birds have increased because of these new prairies, which were once forests, and which man has made, and many others find the edges of the man-made fields attractive. We must maintain the bird control of the insect pests as best we can under these conditions. This can be done by protecting the birds which have succeeded in adapting themselves in a measure to man; the birds which come into the garden and orchard and meadow, and find it good and stay there. We can encourage them to come by feeding them in winter and by providing suitable nesting-sites so that they will stay with us when we need them most and when they need most insect food; and that is when they are raising their young.

Suitable shrubbery, such as a few dense tangles of bushes and creepers or a shady hedge, will afford them shelter from their enemies, and if their greatest enemy, the cat, is banished or tethered or otherwise disposed of, they will amply repay us for all our trouble. The damage we suffer from insect pests is enormous; without bothering about giddy figures, it suffices to say that insects destroy from five to twenty-five per cent. of each year's crop of everything man raises. The forest losses, which are even more difficult of computation, must be as great. The birds help to hold these enemies of ours in check; these lovely creatures which we would protect as we do flowers for their beauty, and which we all must admire because of their musical ability and cheering presence, are really working for us from dawn to dark, and even through the hours of darkness

And then, when you have studied and known the birds that work for you at home; when you really know the robin, and oriole, and chickadee, and chipping sparrow, and a dozen others, you may be tempted to go and see the ones that protect your woods; the shy, retiring birds that avoid the haunts of man and prefer the cool, silent forest; the hermit thrush, the rose-breasted grosbeak and the veery, and very many more. If you once begin to know the birds, they will have a new friend and protector and the gain will not all be theirs. A new pleasure has been added to your experience, new thrills may make your outing an event, and there will be a new motive to draw you from the mundane things of life into God's great out-of-doors, from which one always returns refreshed and rejuvenated to take up the daily task.

When autumn comes, your new-found friends gradually disappear from their accustomed haunts. You will miss them, but other have taken their place. The chickadees and creepers now search every nook and twig and cranny for the hibernating insect or the cluster of insect eggs that would otherwise spell disaster or damage for your shade and orchard trees next year. Attract the chickadee to your house and to your orchard in winter. A piece of suet or a scrap of bacon rind nailed to a tree will keep him working in your immediate neighborhood, and the winter days will seem shorter for his bright and cheering presence. He will appreciate a shelter if you provide one by nailing up a small bird-box or two, and in these he can spend the cold winter nights in safety.

The birds which leave in the fall spend the winter in the United States or even south of them. Your bluebird and your robin may spend the winter in Virginia or in California. Therefore both the United States and Canada have agreed by treaty to protect all migratory insectivorous birds, because these birds belong to us both. It is illegal throughout the whole of the United States and Canada to shoot them or harm them or rob them of their nests or eggs. Everyone must help enforce this treaty, and the best beginning is to protect the insectivorous birds in your own garden, on your own farm, or in your woods. If you see persons shooting insectivorous birds, report persons to the nearest game warden.

If you are a sportsman, you will be glad to know that close seasons of uniform length have been arranged so as to protect the migratory game birds and wild-fowl. Spring-shooting of all migratory game birds is forbidden, and they can now make in safety the northward journey to their breeding grounds, there to replenish their numbers. A permanent close season for a number of species such as wood ducks, eider ducks, band-tailed pigeons, little brown, sandhill and whooping cranes, swans, curlew, and all shore-birds except woodcock, Wilson snipe, black-breasted plover, golden plover, and greater and lesser yellowlegs is now in force, so that these depleted species may increase in number. As a true sportsman, use every influence in your power to assist in the observation and enforcement of the Migratory Birds Convention Act. We need our insectivorous birds to protect our crops and forests, and we need our game so that our children and our children's children will not find that their heritage in wild-life has been destroyed by us. Let us have our health-giving out-door sport, but do not destroy all game. Leave enough so that our descendants, for whom we hold this vast domain in trust, will not lack this incentive to visit the great out-of-doors.

Copies of the Treaty and Migratory Birds Convention Act may be obtained from the Commissioner, Dominion Parks Branch, Department of the Interior, Ottawa.

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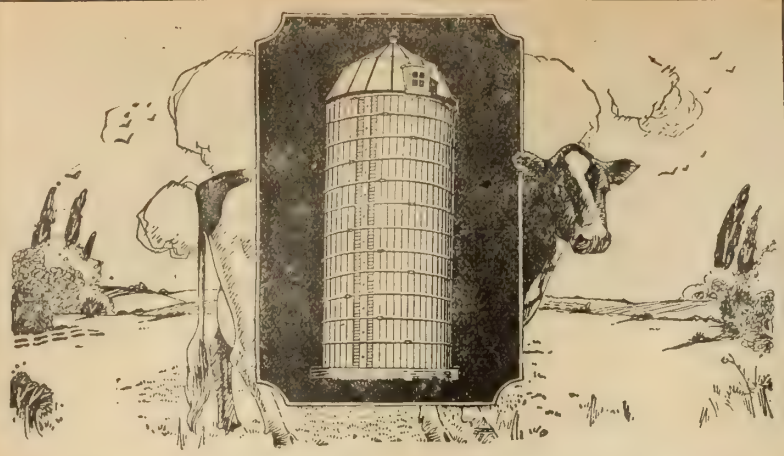

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LANDS WANTED FOR... SOLDIER SETTLERS

POWERS have been granted to the Soldier Settlement Board of Canada by Order in Council of the 11th of February, 1919, to purchase land to be re-sold to qualified returned soldiers who desire to make farming their permanent vocation.

To assist soldiers in settling in any suitable district in which they may wish to locate, the Soldier Settlement Board desires to have filed in each of their Provincial Offices a select list of farm lands available for purchase in each district of the Eastern Provinces, with full description and lowest cash prices of the same. Purchases by the Board will be paid for in cash.

The public are informed that this land is for purchase by returned soldiers, and must be of good agricultural quality, and reasonable price, making possible the success of the soldier as a farmer. It should be within seven miles of a railway, open, free from weeds, water supply assured, and of moderate price. In giving particulars, mention nearest market and school. In comparison with the vast supply of vacant lands, the number of farms immediately required will be very limited. Owners, therefore, will kindly assist the Board by offering for the present only land which fills the above requirements.

No commission will be charged or paid. No offers to sell will be binding on the person offering, unless a sale is effected, and no obligation will be on the Board to accept any offer.

If application from a returned soldier be received for the purchase of land, an inspection and valuation of such land may be made by the Board, as soon as free from snow. If approved, negotiations may be entered into for the purchase and sale thereof. An approved list is desired for each suitable district throughout Canada

All communications concerning land in the Eastern Provinces should be addressed to the Provincial Supervisor of the Soldier Settlement Board for the province in which the land offered for sale is situated, a list of whom is given below:—

ONTARIO:
Mr. W. M. Jones, 32 Adelaide St. E., Toronto.

QUEBEC:
Lt.-Col. Bruce F. Campbell, Drummond Bldg., Montreal.

NEW BRUNSWICK:
Mr. Wm. Kerr, Post Office Bldg., St. John.

NOVA SCOTIA:
Mr. R. H. Congdon, 529 Barrington St., Halifax.

PRINCE EDWARD ISLAND:
Soldier Settlement Board, Riley Bldg., Charlottetown.

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RURAL MAIL

IRRIGATION SCHEMES

W. S., Alberta.—Is it possible to raise water to irrigate to a height about 100 feet to level on high ground? If so, what horse power will it take to hoist it up? My plan is this: to put a pump at the river and force it up to the high level. I want to irrigate about 60 acres of land. I want to elevate the water into a tank and from it pipe the water to one end of the field and let it run in trenches made with a plow to north end of field. There is a gentle slope to the north. I have not seen any irrigation plant yet, but this is my thought: with my storage tank, when full, together with the pump in motion, I could in this way irrigate, say, one-third each day and in that way would not need so large a plant as if I were irrigating the whole 60 acres.

Answer.—There are not enough details given to answer this question completely, but we will suppose that the enquirer wanted to put one inch of water on 20 acres in one day. This would mean 72,600 cubic feet, which would require 453,750,000 pounds of energy. Suppose that the pump does it in twelve hours; then power required, allowing the engine to run at full load all the time, would be 19 horsepower. It would not be safe to work without a margin, so the very smallest engine that could be used would be 25 horsepower and probably a 30 would be safer. If the engine were to run the whole 24 hours, of course, it would only need to be half as much. The proposition on the face of it would be a very expensive one compared with the result. However, before deciding definitely you would need to employ an engineer who could go on the ground and take measurements of all details and then be able to figure out definitely what the cost would be. It is not possible to estimate the cost when one knows so few of the details.

W. H. DAY.

HENS ARE SICK

J. K., New Ontario.—I have lost several hens this winter. They get very thin and weak and on opening them I find the liver all white spots and hard. They eat heartily. Am feeding good wheat, oats, sometimes boiled potatoes and mash, and some have been laying all winter.

The house is warm and sunny with lots of gravel, sand, ashes, water, charcoal and litter to scratch in. Can you tell me the cause and remedy? I have given castor oil which seems to help them a little for a time, but does not cure them. Someone said I was feeding too much wheat.

Answer.—Apparently your hens have tuberculosis and you will have to take drastic measures to clean out the disease. We described this disease on page 76 in the February 1st issue, 1918. You will get a bulletin free on this by writing for Bulletin No. 18, Department of Agriculture, Health of Animals Branch, Ottawa, Canada. On page 8 of this bulletin you will find full particulars of the treatment. Better clean out your whole flock, disinfect thoroughly and start over.

HEREFORDS WANTED

R. G. W., Ontario.—I would be very pleased if you would inform me either through your paper or private where I could buy Hereford cattle, pure bred, and what prices they run at.

Answer.—We have been very friendly disposed to Hereford cattle in the past and would be glad to get any information about them. I have just been talking to a man from Manitoba who has gone into them as feeders on his farm because of their easy-keeping qualities, as well as profit-makers for him. Write to Mr. H. D. Smith, Secretary, Ancaster, Ont., who may be able to advise you.

WANTS CURE FOR SOCIALISM

W. W. M., British Columbia.—Where can I obtain a book entitled "Socialism and Its Evils," by Sir William Erushan Cooper, and where can I obtain fittings, such as handles, screws, etc., for coffins and caskets?

Answer.—We are unable to find where the book entitled "Socialism and Its Evils," by Sir William Erushan Cooper, is published. Perhaps some subscriber can locate it. Regarding the fittings, such as handles, screws, etc., for coffins and caskets, I may say that you will be able to get full information along this line by writing to the Vancouver Casket Company, Vancouver, B.C., who have an agency or head office in Toronto also.

SMALL HOLDINGS IN B.C.

S. J. G., Ontario.—I am an interested reader of FARMERS' MAGAZINE, especially of the articles on the Okanagan and Fraser Valleys. Where can I get detailed and reliable information as to small holdings, market facilities, soil, water supply, buildings, etc., in those parts?

Answer.—Regarding your inquiry about five-acre holdings in the British Columbia Valleys, I may say that you will be able to get some detailed and reliable information on this by writing to the Mayor of Kelowna, and to the Mayor of Vernon, B.C., who will be able to give you some facts about the purchase of land there. I would advise you also to write to the Department of Agriculture at Victoria, B.C., telling them just what you would like to get in touch with and they will be only too glad to put you in line with this kind of farm land.

TRAPPING MUSKRATS

H. C., Ontario.—Where can I obtain full information on the trapping of musrats? Would also like some information on way of removing fur from body and the prices paid for muskrats.

Answer.—Write to any of our fur advertisers for booklets on this or to Robt. Hodgson, Raglan, Ont., for full particulars.

PORK CURING

H. T., Ontario.—Have you a book dealing with the cutting, packing and curing, etc., of bacon or hog products in general?

Answer.—Write to the Manitoba Agricultural College for Bulletin No. 16, May, 1913, on Pork Making on the Farm. Also to United States Department of Agriculture for Farmers' Bulletin No. 913, on Killing Hogs and Curing Pork. We published some good matter on this line on page 51, November 1st issue, FARMERS' MAGAZINE, 1918.

DIARRHOEA IN CATTLE

J. K. McL., Ontario.—Let me know what is good to prevent diarrhoea in cattle?

Answer.—Look to your feeding. If it cannot be remedied here, call in a veterinary, as something is constitutionally wrong. A trained feeder always examines the manure for evidences of trouble in the animals.

WATER SYSTEM

M. V. K., Ontario.—Could you give me any information as to water systems? I want to pipe the water to my barn from a well that is lower than the barn. It is about two hundred feet from the barn to the well and about twenty feet of a fall to the well, that is to the bottom of the well. Could you tell me what size of pipes would be most satisfactory and what kind of a pump I would require for this purpose?

Answer.—Perhaps the new Government Bulletin, No. 267, on Farm Water Supply, will give you all the details required. It may be obtained by application to the Department of Agriculture, Toronto.

EGG CIRCLE

B. M., Ontario.—Could you advise me how to start an egg circle and also the name of a firm in Toronto that handles circle eggs?

Answer.—We do not know of anyone who knows more about egg circles and their management than your Agricultural Representative, Mr. Williams, Department of Agriculture, Port Hope, Ont. If you would write Mr. Williams or call and see him we know he would be glad to give you just the information you want.

ANIMAL SMOKER WANTED

A Subscriber, Ont., wants to know how a smoker for smoking out animals works. How to put it together, how to use, and if one can be made at home, and how to make it.

SICK PIGS

J. A. E., Ontario.—I would be very pleased if you would give me information regarding the following: I have nine pigs that eat but very little feed and sometimes none and always squealing and looking for feed; they also have a little cough when eating. These pigs are four months old. I would like information on this subject also: which would you prefer in winter, putting out manure in long piles a foot and a half deep and spreading from that pile in the spring with the manure spreader, or spreading it right off the sleigh over the ground?

Answer.—Give some more data about your pigs to work on. What are the sleeping quarters like and what feed have they been getting? I would prefer putting manure in winter spreading direct on the fields, except on steep hillsides where the spring wash would carry too much away.

BOGS ON CLYDE COLTS

Clyde Breeder, Man.—My colts occasionally have bogs on their legs which disappear as they grow up. Can I apply anything to take them off at once?

Answer.—These bogs are usually due to too rapid growth and an anaemic condition of the system. The majority of cases require no local treatment, it being sufficient to give the colts fresh air, dry stabling, good ventilation and a tonic. Sometimes some medicine for worms is beneficial as well as a calcium salt, such as calcium phosphate. In some cases an absorbent ointment or liniment well rubbed into swelling helps considerably.—J. N. P., V.S.

STANDING OF COMPANY

A.C.S., Ontario.—Will you please inform me of the financial standing of the Electric Steam Radiation Co., Ltd.? Is it a going concern and what are the capital stock shares worth? Any information you can give me about the company will be thankfully received.

Answer.—All the patent rights of this company were taken over by the Rapid Radiators, Ltd., King St. W., Toronto, about a year ago. Write to this firm for further particulars.

HOUSE PLANS

S.W., Saskatchewan. — Please let me know where I can get plans of house as described in your April 1st, 1918, issue.

Answer.—We are sorry that we have not had working drawings or blue prints made of this house. Our plans are offered rather as suggestions from which an architect or sometimes even a local contractor can make the working drawings.

USE OF DYNAMITE IN FARMING

By A. L.P.

THE use of explosives in farming is not a new idea, for dynamite has been used on the farm now for over 35 years in stumping and blasting large boulders.

Realizing the advantages derived by the farmer in using explosives to improve his land, the explosive manufacturers of Canada have placed on the market a grade of explosives known as stumping powder.

The first batch of stumping powder made in North America was manufactured in 1894, by a Canadian firm at Northfield, B.C., and has since been in such demand that to-day the manufacturers of stumping powder throughout Canada have a staff of men known as the "Agricultural Department," whose function it is to go into the country, advising or helping the farmer in the use of stumping powder.

As the name implies one would naturally come to the conclusion that this powder was made and used for removing stumps only. Although clearing land of stumps and boulders was the original purpose of the powder, it is to-day used and giving equal success in making ditches, draining swamps and ponds, of breaking open the underlying hard-pan, tree-planting and cultivating, excavating cellars, root-houses, wells, fence-post holes, splitting logs, building roads, subsoiling, in fact many a farmer has an eye to improving the production of his farm by keeping a few pounds of stumping powder stored away for use.

Now take the average Canadian farm. Probably there is a creek or gully running across the land in a snake-like fashion, making it practically impossible to cultivate the ground for 50 to 100 feet either side of the steam inside the various bends. The farmer takes a pointed bar or earth auger and makes a line of holes across his farm along the direction of the stream, spacing the holes about two feet apart, placing a stick or two of stumping powder in each hole, depending on the depth of the ditch to be made, and after blasting he would have a straight channel for the water running across his land. There may also be a piece of swamp or marsh on some low land where the cost of ditching to a suitable draining place might be too expensive to undertake owing to the distance required to drain. On examination the farmer might find the swamp or marsh to be underlaid with two or three feet of hard pan, which is often the case, and in keeping the underlaying clays or gravel from absorbing the surface water. In this case the farmer takes his bar or earth auger and makes a hole about two inches wide, down about two-thirds of the way through the hard-pan, putting in a stick or two of stumping powder and blasting it, which shatters and opens up the hard pan sufficiently to allow the water to drain through as fast as it might accumulate, giving the farm new and better ground for crops.

An old orchard may be falling off in production, or an new orchard may not come up to expectations in fruit bearing quantities, so the up-to-date farmer starts in to cultivate or rejuvenate the orchard with stumping powder. This method is to make four or five holes, three or four feet deep in the ground around the tree just outside the branches and place a stick of powder in each hole. On exploding it opens up the soil, giving new feeding ground to the roots and leaves fertilizing properties, that are in the make-up of the stumping powder and injected into the soil at the time of explosion.

A few years ago one farmer who was a constant user of stumping powder, undertook to split logs for cord wood with stumping powder. He drilled holes in the log as far as 2 or 3 inches past the coil and placed about ¼ of a stick of powder in the hole and split his logs quicker and cheaper than if he had done it by the axe and wedge.

Coming back to the original purpose of stumping powder that is clearing land of stumps and boulders, how many farms are there to-day that are entirely free of loafer ground? Not many we will admit. It is unnecessary to leave the stumps rot out when powder is used, for the stumping powder will blow out a green stump as easily as a rotted one, leaving the stump and roots clear of the ground and shaking up the sub-soil so that its fertility is greatly improved.

Land is cleared of boulders just as easily as stumps by either drilling a hole into the boulder for the charge or by placing the dynamite on top of the boulder and covering it over with a few handfuls of clay or sand and exploding it, which is called "mud capping." The broken rock can be used for fences, foundation, farm roads or sold to contractors.

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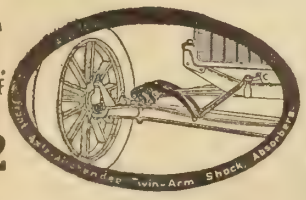
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LIVESTOCK

Swinging Back to the Shorthorn

By FRANK D. TOMSON
Editor Shorthorn in America

PROBABLY more than ever before in the history of improved livestock in America the Shorthorn claims general favor. Certainly this is true when applied to that period in which other breeds have come to claim a share of the patronage of the farmers, the dairymen, the feeders and ranchmen. In the early days the Shorthorn was the only improved breed of cattle and quickly made its impress upon the native stocks. As the country grew and came under agricultral development the Shorthorn grew in numbers and dominated the cattle situation, The use of Shorthorn bulls brought about a great improvement in the native stocks and it was when this improvement had become most widely evident that the Hereford, the Angus, and various other breeds claiming merit as beef or dairy producers were introduced. When the bulls of these breeds were used on the grade Shorthorns the results were widely heralded and the credit was largely accorded to these other breeds. As a matter of fact it was the presence of this Shorthorn blood on the native foundation that made it possible for the showing which resulted from the introduction of the blood of other breeds.

As a people here in the States we are quite apt, a large percentage of us at least, to look upon the new-found things as the panacea for all ills. Many of us are enthusiastic and we become boosters without making a very thorough analysis of the proposition in hand. So it was in part that these other breeds came into public favor to an extent, exploited as the sure way to bovine improvement, the short cut to farm profits, the assurance of greater prosperity. Those who were identified with these other breeds were encouraged, naturally, and their enthusiasm increased and their activities expanded. The Shorthorn had undoubtedly suffered in the matter of type because of a pedigree craze which swept through the ranks of the breeders of Shorthorns and the opposing interests were quick to call attention to the inefficiency of this time-tried breed to the changing conditions. This tendency on the part of a very considerable number of the Shorthorn fraternity gave their adversaries the opening which they did not hestitate to enter. There were, however, far-seeing minds among the Shorthorn breeders who recognized the necessity of remodelling the type, nor did they ever lose faith in the ability of the breed to respond to this remodelling process.

There began a quest among a few of the more progressive men identified with the interests of the Shorthorn for sires that would reproduce the desired type—the early maturing, thick fleshed, rugged type. And then it was that this breed passed through a transition stage in which the legs were shortened, the fleshing quality increased, the prominent hips eliminated, and the pattern gradually changed to one of smooth and compact form. Constitutional vigor was increased and a farmer's type that fitted in to the feeding conditions of the period was evolved. It should not be understood that there were not many Shorthorns of this type in the preceding years, for unquestionably there were, but the breeders unfortunately were influenced to a very great extent by pedigree fads and this resulted more or less in sacrificing early maturity and practical value.

But during this period when the Shorthorn breed was being molded into the more useful type the activities of the supporters of other breeds became more insistent and more general. Many uninformed were led to believe that the Shorthorn actually lacked the qualities and characteristics necessary to successful cattle production. They ignored entirely the long and useful part which the Shorthorn had played in agricultural progress. They forgot, or failed to note, the numerous benefits which the breed had brought to American farmers and they listened eagerly to the endorsements of other breeds, paying little heed to the fact that the success of these was due in considerable part to the foundation of Shorthorn blood already laid. Then it was that many adopted other breeds. Some inclined to dairying, others to beef making exclusively and each followed his choice. There were many, of course, who stayed by the Shorthorn, who never lost faith in its inherent responsiveness and potency. But many left the Shorthorn path in quest of the short cut.

Following in the wake of this tendency came the period when specialization was urged. Many "dairy" trains manned with lecturers were run through various sections of the country. Better dairying methods were advocated and both directly and indirectly the farmers were encouraged to take on the strictly dairy breeds. The suggestion of a dual purpose breed was usually met with laughter by the so-called experts. The Shorthorn had little place in this propaganda. The Shorthorn breeders had not kept milk and butter-fat records. They did not have elaborate charts to show what their favorite cows had yielded. They only knew that the Shorthorn had always made their living for them. They knew it was a breed that could be relied upon but they had little show when it came to the lecture platform and the dairy train "instruction. So it was that many farmers discarded valuable cows, largely of Shorthorn breeding, to place in their stead representatives of dairy breeds and a new system was undertaken. It was quite natural that a wave of enthusiasm spread among these people and undoubtedly their methods were improved, but after a while in numerous cases it became evident that the newly acquired representative of the dairy failed to make a showing comparable with "Old Cherry," and "Roany" and "Spot" and the others that had been sacrificed to make a place for these of specialized breeding and conformation. Somehow there was a lack of demand for the calves and it did not seem profitable to raise them. Too many of the females failed to yield a profitable amount of milk and when it came to turning them to the butcher the returns were disappointing. It took quite a little time for all of this to make itself apparent, but one day the farmer fully realized that he had turned out of his barnyard a class of cows that had played their useful part in the making of his profits and had substituted therefor not a few of doubtful efficiency.

The situation described was not limited to one locality or state. It touched many communities and in many there was disappointment and financial loss as a result. But in time there were many who came to more fully understand the adaptability of the Shorthorn and the demand turned back to this resourceful breed, a little here, a little there, but definitely. There are many farm dairies to-day that have adopted the Shorthorn that had hitherto turned away from this breed on the assumption that they could better their condition. Slowly but positively this turning back to the Shorthorn as the most dependable breed for the farm is under way. Its progress is retarded because of the scarcity of the supply but the demand is insistent. It has become apparent that the inherent tendency in the Shorthorn to yield a liberal flow of milk may

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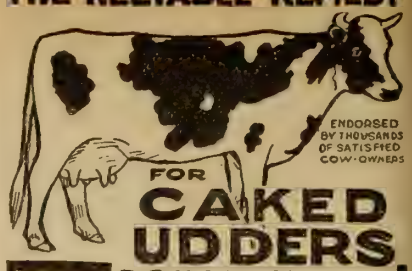

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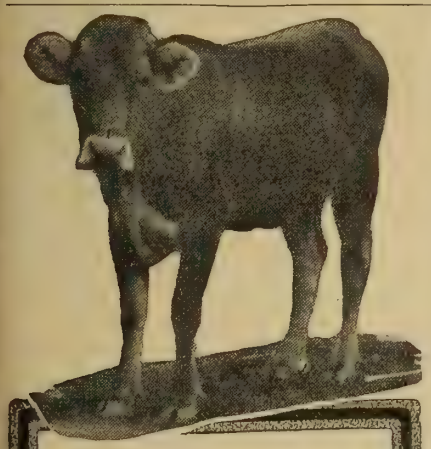

Cut Dairy Costs

THOUSANDS of dairymen are using Empire Milking Machines to cut dairy costs. Many write us they would have to go out of the dairy business if it were not for

EMPIRE MILKING MACHINES

And it's true, too. You have no idea what a saving in time and increase in milk production results from the use of such a highly perfected and universally successful milker as the Empire.

And now, with its Super-Simple Pulsator—the pulsator without a piston—the Empire is placed immeasurably ahead of any other milker on the market. Buy no milker until you see the Empire.

Let us send you the details. Write for catalog No. Or, better yet, let us have our local dealer demonstrate for you. No obligation. Write for his name.

The Empire Cream Separator Co. of Canada, Limited
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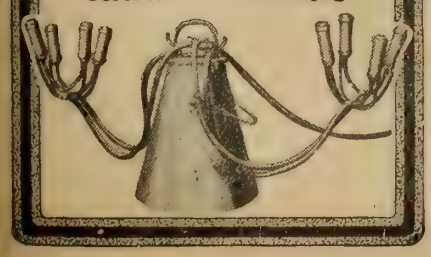

be stimulated without sacrificing the beef characteristics. Here and there a Shorthorn breeder takes a radical view of milk production and is inclined to force his herd along the line of specialization. But this is a doubtful practice nor is it generally encouraged. The Shorthorn seems adapted to the dual production of beef and milk and because of this combined ability it fits into the farm operations as no other breed can do. It is the return from all sources on the farm combined that makes up the farmer's surest profit. Only rarely is there a farmer who can be a specialist and but few farms are adapted to specialization.

So it is that the Shorthorn has begun to take its place on the farms of the States in quantities never before heard of. The Shorthorn cow has the capacity to convert the ordinary farm products into beef and milk without the need of pampering and her calves are always in demand. The records which Shorthorn cows are making in the dairies fully answers the doubtful questionings of the dairy expert whose preferences rest with other breeds. Some very interesting and convincing results have been obtained in local, county, and state testing associations in which Shorthorn cows have made a remarkable showing. Such a contest covering a period of twelve months was held in Minnesota and a registered Shorthorn cow made the highest record among 700 entries representing all breeds, her yield being slightly in excess of 17,000 pounds of milk in the twelve months. But the farmer is not so much concerned with high records, for as a rule high records are the result of high pressure methods—methods that are expensive and do not fit in with the everyday program on the farm.

During the past year Shorthorn steers made some remarkable records at the beef markets; at least five times were the world's records broken, the record prices paid for Shorthorn steers successively being $19.50, $19.60, $20, $20.25, on the open markets and $20.75 for a load of yearling feeders, the last sale being made at the Western Stock Show at Denver, Colo. When the extra weight of the Shorthorn steer is combined with the quality which attaches to all well-bred Shorthorns the producer has easy sailing at the market.

Because the Shorthorn cows have demonstrated their usefulness on the farms everywhere whether dairying or beef-making is the program and because of the invincible place which the Shorthorn steer has at the market the swinging back to the Shorthorn was inevitable and is steadily reaching wider proportions.

HEREFORD BREEDERS OF SASKATCHEWAN ORGANIZE

AT a well-attended meeting held in Regina on March 12th last, the breeders of pure-bred Herefords organized a provincial association to be known as the Saskatchewan Hereford Breeders' Association. After adopting a constitution and bylaws came the most important part of the evening, when Mr. W. H. Gibson of Girvin, Sask., formerly of the Experimental Farm at Indian Head, was elected as President. With Mr. Gibson's wide experience and excellent executive ability, coupled with the hearty support of every member of the association, and judging from the enthusiasm shown at the meeting, the future of the association is assured.

The other officers elected were Vice-President, C. J. L. Field, Moosomin; Directors, L. Christie, Kamsack, Sask.; W. H. McLinton, Estevan; Ollie Olafson, Martach, and the Livestock Commissioner of Saskatchewan; Sec-Treas., W. H. Harrison, Montmartre, Sask.

PATENTS

Write for how to obtain a patent.

List of Patent Buyers and Inventions wanted. $1,000,000 in prizes offered for inventions. Send sketch for free opinion as to patentability. Our FOUR BOOKS sent free. Patents advertised FREE. We assist inventors to sell their inventions.

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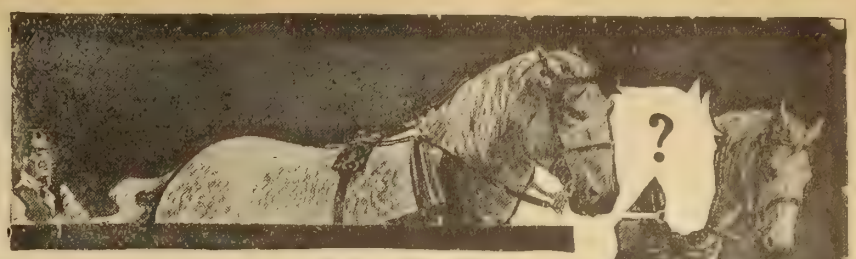
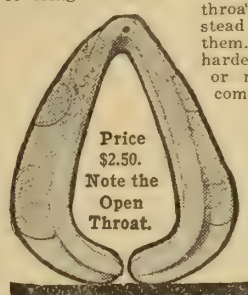


Do You Have Galled Horses in the Stable when Needed in the Field

A heavy leather collar rubbing against tender, sweaty shoulders is very apt to cause galls. Do away with sore shoulders by using Lankford Collars. They not only prevent but actually heal galls while the horse works. More than a million a year now used in place of leather.

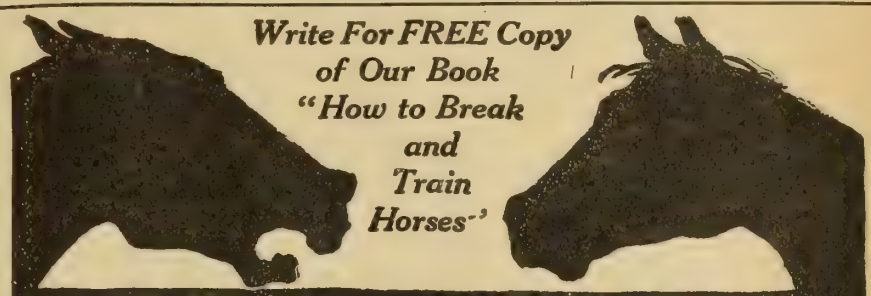
Lankford HUMANE HORSE COLLAR

Made of soft, oily, springy cotton fiber. Does not hold heat. Absorbs sweat and impurities—keeps shoulders dry and cool. The closely woven army duck covering is like a surgical bandage. Open at the throat—moved with shoulder muscles, instead of chafing and rasping against them. Easy to put on. Will not pack or harden. Cannot sweeney. Often last three or more seasons. A collar and pad combined. **Every Collar Guaranteed**



Every collar is sold upon the guarantee that galled horses get well while working in Lankfords. If your dealer cannot supply you, send us $2.50 (state size wanted), and we will send you a collar, charges prepaid. (8-2c)

THE POWERS MFG. CO., Box 20 Waterloo, Ia.



$125 PROFIT ON ONE HORSE

HOW ONE MAN CHANGED A VICIOUS "NAG" INTO A FAITHFUL PLUGGER

Charles H. Mackley, of Unadilla, New York, bought a vicious, kicking and biting mare for $50. The horse was a mean one and no mistake. Impossible to drive, and the mere sight of any one transformed the horse into a regular "bucking broncho."

It looked to Mr. Mackley as though this terror wouldn't even earn her feed. About this time Mr. Mackley was introduced to a student of Professor Beery, the famous American horseman. And at this friend's suggestion, Mr. Mackley wrote to Professor Beery for the Beery Course in Horse Breaking and Training. Mr. Mackley gave the course a little spare-time attention and then applied his knowledge to correcting his vicious mare. In 10 days, thru the application of Beery Methods, this $50 "unbreakable broncho" was transformed into a patient, obedient and faithful plugger, which its owner latter sold for $175.

$125 profit through the Beery System is but one instance. Hundreds of others write us how they have transformed balkers, kickers, horses with habits, and dangerous horses of all kinds into patient, obedient workers of high value.

QUICK, EASY WORK SURE RESULTS

No theory about the Beery Method. It is the result of 30 years' experience with thousands of horses. The Beery Method is certain and *guaranteed* to produce results.

Thru the Beery Course, you can easily tame the most vicious horse into a gentle, dependable plugger. Not only will the Beery System teach you to break vicious colts the right way, but thru it you can break any horse of any of his bad habits *permanently*. Balking, shying, biting, kicking, fright, and all other bad habits will be totally cured *forever*—and the result will be a more useful horse to own, and a more profitable horse to sell.

WRITE FOR FREE BOOK

Many Beery Students have been able to pick up a number of "ornery" horses which their owners were glad to get rid of. Then, through the Beery Methods, they have quickly transformed these vicious "nags" into willing workers and have sold them at a big profit. Our free book "How to Break and Train Horses" explains fully about the Beery Course and how much it will mean to you. With the knowledge gained from the Beery Course, you can quickly make your horses or anyone else's horses gentle and dependable.

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Send coupon or postal card today for big free book "How to Break and Train Horses." It gives much valuable information and explains fully about the famous Beery Method. Mail coupon or post card NOW.

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Please send at once your free book "How to Break and Train Horses."

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A money-making message from one farmer to another

AN Alberta farmer made a discovery the other day which he wants every farmer in the Dominion to know about and benefit by.

Here is his message about it. Read his letter just as if it were written direct to you, as he wants you to:

Talbot, Alta., March 3, 1919

The Financial Post,
Toronto.

Gentlemen:—

Please find enclosed M. O. to extend my subscription to your valuable paper. I noted that in one article as regards packers and exporting of Bacon, THE POST deplored the lack of understanding of the situation **from the farmers' point of view.**

If that article had been read by all the farmers in the Dominion, it would most certainly have been the means of readjusting some of their ideas, as regards the necessity of having cattle buyers, packing houses, etc. **I think that your valuable paper is just as essential to a farmer as to a banker or any other business man.** It will enable him to have a better and wider viewpoint as regards the manufacturers, packers, banking and tariff questions. He would then not readily absorb just one side of the question, but could weigh more accurately both viewpoints and arrive at a more satisfactory conclusion for himself and permeate the same among his friends, through discussions. Why not have a campaign among the farmers for subscriptions? It would be a mutual benefit, helping THE POST and also helping the farmers to a better understanding as regards the welfare of our country.

Yours truly,
CUTHBERT FOWLER.

YOU will see from this that we are taking Mr. Fowler's suggestion. You can join the increasing number of business-like farmers who take THE FINANCIAL POST by simply filling in this form. Do so without delay as events are moving very fast, and you stand to gain a great deal from the business service THE POST, of all papers, can most speedily give you.

Annual Subscription $3.00

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Please enter me as a regular subscriber, commencing at once.
I will forward / am enclosing $3.00 to pay for my subscription for the first year.

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F.M.—Ap.-19 Please write plainly

The Movements of Farm Markets

By STANLEY T. ARTHUR

CANADA'S markets for farm produce are reflecting in a remarkable degree the conditions which prevail in the United States, which is not only a good customer for our surplus products, but a contender in Canadian markets with Canadian buyers. Exports to Great Britain have largely shaken off control which has fettered individual effort in the past several years, and old connections are being re-established.

The outcome of this situation is that while prices had been enjoying the usual spring time slump, the market received the tonic of export orders, and produce has been selling unseasonably well.

That is not to say that prices, however, are unreasonably high, considering the cost of production. Costs have not declined, but the cessation of hostilities was the signal for all concerned to start putting food prices down to the lowest possible level.

Hay prices have been well maintained all winter by the placing of large orders of U. S. contractors in Canada. The vegetable market has been galvanized into action in the same way. Onions were the first to feel this, and prices jumped sensationally almost over night. They are now bringing from $2 to $2.50 per bag at Toronto, and the market has been pretty well cleaned out of all available supplies. These onions are in some cases to fill the void left by exportations from New York to Great Britain in an experimental way, but all border cities have been in the Canadian market for supplies.

It had been thought that there would be a surplus of potatoes in the Northern States, but actual conditions showed the reverse to be true, and a shortage of 40 million bushels developed. For that reason vegetable brokers in Toronto have been feeding supplies of the tubers across the line in large quantities. A few weeks ago they had touched a low mark that did not represent anything like the cost of production, but under export buying, prices have advanced at Toronto again to as high as $1.15 to $1.20 per 90-pound bag, which is a good price—considering.

The Ontario crop of cabbages has been cleaned up, and Americans are coming over, at $3 per barrel, with prospects of still higher prices in the near future—so the boot is not all on one foot.

Again, the butter market has enjoyed prosperity at the hands of the U. S. buyer. Government control of a large portion of last season's make in the U. S. resulted in such confusion that it was recently found that the U. S. trade was not prepared to meet its own demands, and heavy buying was carried on in Ontario, where the lid is off insofar as price restrictions go. This movement developed suddenly, and resulted in a most sensational advance in prices that amounted to fully 7c per pound in the case of choice creamery butter, and the golden product was going out of the Province, "like out of a sieve," as one dealer put it.

Creamery butter at Toronto at the time of writing is quoted at 57 to 59c per pound, with a wider range both ways for extremes of quality. At Montreal it is also quoted at 56 to 59c per pound. At New York it brings 69 to 69½c per pound. Dairy butter has shared to a lesser degree in the movement, and brings 47 to 48c per pound at Toronto; and 45 to 47c at Montreal. At New York it is quoted at 66 to 67c per pound for the top quality.

Churning cream has not reacted so quickly as the butter market for several reasons, chief of which is probably the uncertainty of the present flurry of the butter market. Quotations are around the 58 to 60c mark at Toronto, that price being quoted tentatively on the basis of pounds of butter fat, net to the shipper. If the strength of the butter market continues, cream prices will be bound to work to higher levels than this.

Egg prices have firmed up more or less at all markets. This is caused by several things. In the first place, when prices dropped consumption increased, with the result that buying was more keenly carried on. Then, recently, some exporting to Great Britain was commenced as a result of favorable offers from the other side of the pond. It is not considered that imports to Canada will amount to much as far as trade with the U. S. is concerned this season, as prices to the South are not favorably comparable to ours. Eggs are quoted at 43c per dozen, delivered at Toronto; and at Montreal are changing hands in a wholesale way at 43 to 44c per dozen. New York reports eggs at 37 to 44c per dozen for regular run of fresh stocks.

The healthy tone prevails, also, in the grain markets, though wheat prices are still under control. All coarse grains have been marked up to higher prices at Toronto, some of them in a sensational manner. In several weeks oats advanced from 67 to 74c per bushel on the street at Toronto, and 61 to 69c at outside points, with a downward spread of 2c per bushel for quality. Rye, which is quoted at $1.59 to $1.60 per bushel at outside points, shows an advance of 25c per bushel. Malting barley is 15c higher, at $1.02 to $1.03 per bushel at Toronto, and 96c to $1.01 at outside points. Peas and buckwheat are unchanged at $1.80 and 85c per bushel respectively.

Baled hay continued firm in price at all Canadian markets, and renewed buying has been done during the past month or so for American buyers. At Toronto baled hay is quoted at $20 to $21 per ton, and mixed and lower grades at $18 to $19. Baled timothy at Montreal brings $22 to $25 per ton and clover $2 to $24.

In the livestock section of the market a healthy tone prevails, and fairly stable prices are being realized. Hogs provide the most interesting feature of the trading, as they were expected some time ago to remain at low levels. At Toronto, however, they have been bringing $19 fed and watered for the past two weeks. At Buffalo the advance in one week amounted to 35c, putting them on a basis early last week of $20.25, fed and watered. The hog market, however, generally supplies these variations in a greater or less degree.

It is interesting to note that as prices paid for Canadian livestock falls below that paid across the line, the sellers are not slow to take advantage of export facilities, and this movement has become so pronounced that at Buffalo quotations are regularly given for both Canadian cattle, and Canadian hogs. Comparisons on this point are interesting, and the following table brings it out in concise form:

	Buffalo	Toronto
Heavy steers	$15.00-$16.00	$14.00-$16.00
Steers and heifers	13.00- 14.00	12.00- 12.25
Fat cows	11.00- 13.00	12.00- 13.00
Hogs	19.00- 20.10	19.00-

This export business is a day-to-day affair, export buyers operating on the Union Stock Yards at Toronto only when the conditions are favorable, keeping in close touch with the Buffalo market to scent a shifting of the wind.

Cattle are going across the boards at Toronto at strong prices, and anything of quality in the butcher line is quickly taken up. Choice heavy steers at Toronto have a top of $14 to $15, and at Montreal up to $14.50.

Spring lambs have commenced to come, but in small numbers, and brought $12 to $15 per head at Toronto, late fall lambs bringing $19.

At Montreal spring lamb sold at $15 and $16 apiece.

At Toronto hogs have been holding at $19 fed and watered, but at Montreal it dropped from $20 to $19.75.

LIVE STOCK FARMING ON THE PRAIRIE

By H. J. McLaughlin.

A BEAUTIFUL picture was formed in my mind one Sunday evening this winter, when I promised my two boys that I would do the chores for them.

As I leaned up against the south side of he barn, out of the wind, the hired man scattered out a load of corn fodder across the meadow. That was the hay for sixty odd head of Percherons that night. Then I took a sack of oats and went to feed the

TESTING PURE-BRED COWS IN NEW SOUTH WALES

Breed.	No. Under Test. 1916	No. Under Test. 1917	No. Completed 273 Days. 1916	No. Completed 273 Days. 1917	Average Yields. Butter. 1916 lbs.	Average Yields. Butter. 1917 lbs.	Average Yields. Milk. 1916 lbs.	Average Yields. Milk. 1917 lbs.
Jerseys	27	37	94	28	306	388	5,199	6,320
Milking Shorthorns	26	65	11	46	439	410	8 567	8,827
Ayrshires	12	19	20	14	365	382	6 866	8,130
Guernseys	7	15	1	8	261	326	4,516	5,923
Total	72	136	126	96	...	...	.....	.....
Average	..	...	...	..	327	392	5,720	7,752

The above table issued by the Department of Agriculture in New South Wales will be interesting to dairymen. Milking Shorthorn men will rejoice.

calves, all Herefords and all alike. A farmer friend visiting us said that he never saw such an impressive sight in a cattle lot before. As we went from lot to lot feeding the Herefords of different ages, I could see plainly why this man was so pleased. As the calves just weaned came running up over the hill bucking and shaking their wintry coats and tossing their saucy heads all as white as snow, my heart was moved and I gave them a little more oats than I ever did before, because I knew that even though feed was high and scarce, every bushel of oats these calves ate was going into money-making cattle. The cows, the young heifers, and the sire of these calves all fared extra well that Sunday evening, for I like to see them eat, go away, and lie down contented, as it were, at the end of a Perfect Day.

No sooner had I finished the cattle part of my chores, than I heard old Sidonia nickering at the barn door. There were all the Percheron mares with foals wanting in for a bite of grain. That told me that the boys had been in the habit of feeding these faithful matrons and their colts just as I like to feed the calves. I let them all in and gave them a wash pan of oats in each box, mother and foal alike. When they had finished I turned them back to the pasture. This friend watching the mares and colts go off said: "Where is your tractor?" I said, "Let's go into the house and I'll tell you why I don't use a tractor." This is my reason. Twelve years ago I bought the old Percheron mare Sidonia, in foal, her yearling filly and a weanling. She was then eleven years old. From that start I have produced thirty-nine head of living Percherons, fifteen head of which have been sold at a total of $7,350. There are now on the farm twenty-four more descendants of this old mare that I value at a little over $6,000 at present values for Percherons. I sold one stallion out of this old mare for $1,300. I don't farm with a tractor because I can't afford it. More dollars' worth of Percherons are sold off my farm every year now than my total feed bill, and the mares do the work of tilling a section of land, besides last spring my attention was called to the fact that we were plowing for corn with three 14-inch two-bottom gang plows and that the power we were using was fifteen pure-bred mares and every one of them heavy in foal. We hitched three in the rear team and a pair in the lead. I have said to every tractor salesman who has talked to me: "Whenever you can put a tractor on my farm that will do my work as cheaply as my Percherons, I am ready to buy a tractor." I mean it, too, for I am in the business of farming as a money-making proposition, and whenever mechanical power can be so perfected that it can compete successfully with good Percheron mares in working my land and doing it cheaply, I am ready to buy a tractor and sell off some Percherons. This friend who was visiting me has a tractor and twelve hundred pound horses. These are usually found working together on his farms.

After my friend left that evening, my wife was curious to know why it took me so long to do the chores. She said: "You think the boys waste a lot of time choring." Well, I had to admit that it took longer than I had anticipated because I like to stand and watch the calves and colts eat. She said: "Our boys take after their father in some things and I expect that is one of them." That set me to thinking and I wondered if the fact that we were breeding Percheron horses, Hereford cattle, and Duroc-Jersey hogs was largely responsible for my boys staying on the farm instead of seeking the city. Young men are usually progressive and want to get ahead and there is no way that they can accomplish so much on the land as by breeding good pure-bred live stock. Then every bushel of grain or ton of hay that is raised and fed into such animals, goes much farther and makes more money than if fed into common scrub stock. I have been a cattle feeder and breeder ever since I came to this farm twenty-eight years ago, and although I have been in the Hereford business only a few years I can see plainly that our farm will net $5 now every year from our white-faced cattle, where it wouldn't make $1 before when we raised and fed common stock cattle. Whenever a father can go to his son and present such encouraging figures it makes a splendid argument why the boys should stay on the farm and raise good live stock. Then the doing of the chores becomes a pleasure instead of a burden and more often than not successful farmers are made out of men who otherwise would be failures.

SARNIA FENCE
Lower Prices on Fencing

TO make sure that you get your fencing when you want it this spring, we advise, yes, urge you to place your order now or at the earliest possible date. We can make prompt shipments now. We are reasonably certain that the demand this spring will far exceed our capacity, in fact, the capacity of any factory in Canada. Don't be one of those belated farmers who places his order at the eleventh hour when the rush season is on, because no human agency can overcome possible transportation delays, shipping congestion and other interruptions that follow the breaking up of spring when the fence building season is on. It is to your advantage to have your fencing in hand for use the first available "fence day" that comes along. Better be safe than sorry. Place your order now. Our prices quoted mean Government standard gauge wire, prompt shipments, best quality, lowest prices, only two profits—yours and ours—a direct shipment from the factory on our prepaid freight plan fencing fresh from the loom, new and bright, no better fencing made anywhere. Ask the man who uses Sarnia Fence. He knows.

Buy Now and Save Time and Money on Your Spring Requirements
Take Advantage of Our Low Prices and Prompt Delivery

NOTICE—These prices include freight prepaid to your nearest station in Old Ontario in lots of 200 lbs. or over. We do not pay freight on Electric or Steamboat Lines. Write us for special prices on carlots, as a considerable Saving in price can be effected as compared with L.C.L. shipments. Fence put up in 20, 30, and 40 rod rolls.

HEAVY WEIGHT STYLES
Made throughout of Full Government Gauge No. 9 Hard Steel Wire

Price per rod delivered in Old Ontario

4-33-0—Ranch Fence. 4 line wires, 33 in. high, 9 stays per rod, spacing 10, 11, 12. Weight per hundred rods, 550 lbs. **31c**

5-40-0—Horse and Cattle Fence. 5 line wires, 40 in. high, 9 stays per rod, spacing 10, 10, 10, 10. Weight per hundred rods, 650 lbs. **37c**

6-40-0—Horse and Cattle Fence. 6 line wires, 40 in. high, 9 stays per rod, spacing 7, 7, 8, 9, 9. Weight per hundred rods, 750 lbs. **43c**

7-40-0—Horse and Cattle Fence. 7 line wires, 40 in. high, 9 stays per rod, spacing 5, 6, 6, 7, 7½, 8½. Weight per 100 rods, 850 lbs. **49c**

7-48-0—Horse and Cattle Fence. 7 line wires, 48 in. high, 9 stays per rod, spacing 5, 6, 7, 9, 10, 11. Weight per hundred rods, 900 lbs. **51c**

8-40—Sheep and Hog Fence. 8 line wires, 40 in. high, 12 stays per rod, spacing 3, 3¾, 4¾, 5½, 7, 8, 8. Weight per 100 rods, 1,050 lbs. **60c**

8-48—General Stock Fence. 8 line wires, 48 in. high, 12 stays per rod, spacing 4, 5, 6, 7, 8, 9,9. Weight per hundred rods, 1,100 lbs. **63c**

9-48-0—General Stock Fence. 9 line wires, 48 in. high, 9 stays per rod, spacing 3, 4, 5, 5, 6, 8, 8, 9. Weight per hundred rods, 1,100 lbs. **63c**

9-48-OS—Special Horse and Cattle Fence. 9 line wires, 48 in. high, 9 stays per rod, spacing 6, 6, 6, 6, 6, 6, 6, 6. Weight per hundred rods, 1,100 lbs. .. **63c**

9-48—General Stock Fence. 9 line wires, 48 in. high, 12 stays per rod, spacing 3, 4, 5, 5, 6, 8, 8, 9. Weight per hundred rods, 1,200 lbs. **69c**

10-50—Horse, Cattle, Sheep and Hog Fence. 10 line wires, 50 in. high, 12 stays per rod, spacing 3, 3¼, 3½, 4¾, 5½, 6, 8, 8, 8. Weight per hundred rods, 1,325 lbs. **76c**

MEDIUM WEIGHT STYLES

The following styles are made of No. 9 top and bottom wires, and No. 12 intermediate and stay wires of full Government gauge, and galvanized to stand an acid test:

Price per rod delivered in Old Ontario

6-40-16—Cheap Pasture Fence. 6 line wires, 40 in. high, 16 stays per rod, spacing 7, 7, 8, 9, 9. Weight per hundred rods, 570 lbs. **35c**

7-26-16—Hog Fence. 7 line wires, 26 in. high, 16 stays per rod, spacing 3, 3¼, 3½, 4¾, 5½, 6. Weight per hundred rods, 580 lbs. **36c**

7-42-16—Sheep and General Purpose Pasture Fence. 7 line wires, 42 in. high, 16 stays per rod, spacing 6, 7, 7, 8, 8. Weight per hundred rods, 640 lbs. ... **40c**

8-34-16—Hog and Sheep Fence, 8 line wires, 34 in. high, 16 stays per rod, spacing 3, 3¼, 3½, 4¾, 5½, 6, 8. Weight per hundred rods, 670 lbs. **42c**

9-42-16—A General Purpose Fence at a Low Price. 9 line wires, 42 in. high, 16 stays per rod, spacing 3, 3¼, 3½, 4¾, 5½, 6, 8, 8. Weight per hundred rods, 750 lbs. **47c**

14-48-16—Special Garden Fence. 14 line wires, 48 in. high, 16 stys per rod, spacing 3, 3, 3, 3, 3, 3, 3, 3½, 4, 4½, 4½, 5, 5½. Weight per hundred rods, 1,060 lbs. **66c**

POULTRY FENCES

Price per rod delivered in Old Ontario

18-50-P—Stock and Poultry Fence. 18 line wires. 50 in. high, 24 stays per rod, top and bottom wire, No. 9, filling No. 13 hard steel wire, spacing 1⅜, 1⅜, 1⅜, 1⅜, 1⅜, 1⅞, 2, 2¼, 2½, 3, 3½, 4, 4½, 4½, 5, 5, 5. Weight per hundred rods, 1,225 lbs. **80c**

20-60-P—Stock and Poultry Fence. 20 line wires, 60 in. high, 24 stays per rod, top and bottom wires, No. 9 filling No. 13 hard steel wire, spacing 1⅜, 1⅜, 1⅜, 1⅜, 1⅜, 1⅞, 2, 2¼, 2½, 3, 3½, 4, 4½, 4½, 5, 5, 5, 5, 5. Weight per hundred rods, 1,325 lbs. **88c**

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POULTRY

A BIG LEGHORN PROFIT

By Mrs. D. G. Harrison

I READ the letter on poultry by Ivor C. Bice in the Farmers' Magazine of 15th February. By his letter he seems to think that a hen that lays a hundred eggs is a rare thing. Now, I have a few hens which have done very much better than that.

I have a flock of 15 rose-comb brown Leghorns, accounts of which I send regularly to the Dominion Experimental Farm on their special forms. The annual statement from January, 1918, shows that these fowls laid a total of 3,058 eggs, an average of 204 eggs per hen. The receipts were $156.37 and the expenses $48.55, leaving a net profit of $107.82 or $7.18 per hen. I live in the village with near neighbors, and hens have to be confined to yard all the summer months.

I feed wheat twice a day, with a mash at noon of ground oats and bran, scalded well. Plenty of oyster shell and meat once a week when I can get it at a reasonable price. I always buy my wheat in the fall, enough to do for the year. I buy from the farmer, therefore have the best of feed and cheapest in the long run. The feed wheat we buy for hen feed at the mills is very poor stuff to expect hens to lay on.

PREPARE FOR HATCHING—THE INCUBATOR

By Prof. W. R. Graham.

THE early hatched pullets are usually the best winter layers. Pullets hatched during the first three weeks of April not only lay from two to three dozen more eggs during the year, but lay many more eggs during the winter. The average pullet begins laying at an age of six and one-half to seven months; the later hatched ones are slower to mature than those hatched early. To be sure your chickens will be hatched early an incubator is almost a necessity. The later the hens begin to lay, generally, the later they become broody.

An incubator is a machine and responds to treatment the same as any other machine. It is not difficult to handle, but it cannot supply its own oil for heat or keep itself clean, nor yet can it supply the little chicks inside the eggs with good pure air unless the room in which the incubator is placed has good air.

Most of the well-known incubators will give fair hatches if operated according to directions. Much depends upon having good eggs. Eggs early in the season do not hatch as well as later, but the pullets earn sometimes as much as a dollar each more than their sisters hatched in May or early June.

The room in which the machine is run should be clean and well ventilated. If you can sleep in the room comfortably it is good enough. Usually a cellar is the best place because the temperature is more even and the machine is, therefore, easier to regulate as to heat. The incubator should be clean, especially is this true of the interior of the machine. It is advisable to brush out the machine as clean as you can, then wash it out with water and soap, and lastly disinfect it. Perhaps one of the easiest materials is to use the common tarry compounds that are used about the stables. Just spray or wash the machine thoroughly after each hatch. It does not take much time and saves a lot of trouble with the chicks. With some types of machines having cloth tops in the hatching chamber it is wise to remove the old cloth each season and replace it with a new piece.

Be sure and test the thermometer. Take it into a drug store and the druggist will test it for you alongside one of known accuracy. Many hatches are lost through bad thermometers.

Get only clean eggs and of good size or set the kind of eggs you want the pullets to lay. Be sure your hands are clean when you turn the eggs. Oily or dirty hands lower the hatch. Do not keep the oil can in the same room as the incubator.

When chicks hatch do not feed them before they are at least forty-eight hours old. Should they pant inside the machine open the door a little. Give them plenty of air.

POULTRY NOTES

By C. H. Pethick

PROVIDE good shelter for the flock from early spring weather ravages. Undraughty quarters are essential to steady laying.

Examine any drooping birds for signs of lice. Confinement through the winter months assists in developing the pests.

Lewis N. Clark is a practical enthusiast over the night-light poultry scheme. Why are not more of our chicken men adopting the idea?

The heavy winter ration may now be considerably relieved. The amount of grit, meat and green food required is much lower than through the winter season.

It is said that a small portion of cayenne pepper mixed with the meat ration increases the egg yield.

Give the incubator a complete overhauling before putting it in use. See that the regulator is in perfect working order, lamp in good condition, etc. A strong solution of diluted carbolic acid, applied internally, is a valuable expedient against germs.

Why is the percentage of infertile eggs greater among those of thoroughbreds than mongrels? That is a question many have been asking. Is it because most thoroughbreds have a higher laying capacity and that the subsequent strain upon them affects the fertility of their eggs?

The demand for eggs bids fair to remain at its present high position. Steady demand means steady prices—so let's make a bit further progress in the hatching line this year.

WHAT LED ME TO STUDY WHEAT

Continued from page 7

grown—grain, butter, eggs being disposed of in trade; with butter 10c per lb., eggs 8c per dozen, there was little or no possibility of paying off the loan against the farm. So a move was decided on and a trip to the Rosthern country opened my eyes to the advantage of settling there. The move was made and the wagon loaded up with our belongings. With some regret my first land I homesteaded was abandoned and I arrived at Rosthern on Queen Victoria's birthday, 1897. As no homesteads were available to me—I had to look up a farm on land owned by the Saskatchewan & Long Lake Railway Co., owned by the Canadian Pacific Railway Co. After looking over some of the best sections, I decided to buy the one I now am living on at the price of $3.00 per acre, pavable in ten yearly instalments, a very low price for land as compared with present day prices. At that time it was big to me, with nothing to start with excepting 30 head of cattle of all ages that I trailed with me from Saskatoon. The first instalment for the land was kindly loaned by the agent of Rosthern, payable later when a couple of cows were sold. Thus my second venture was made and I have not regretted the step or my choice of a farm. At the end of the tenth year the last payment for the farm was made.

Shortly afterward, an exhibit of wheat sent to the New York Land Show won the $1,000.00 prize given by the Canadian Pacific Railway Co., which was just the amount I paid for the farm. Throughout this article I have given some of the bare outlines of my earlier experiences in wheat growing. While no big yields were grown or anything out of the common happened, it really was the beginning of my efforts to improve the wheat crops and these first efforts led me to study wheat.

First the desire to grow more wheat per acre. Secondly the quality of the wheat, and what was then a keen desire to provide and have necessities of life, has now become a hobby out of pure love for the work.

RURAL CONDITIONS IN EASTERN CANADA

By Wm. MacOdrum

WE are now in the period of reconstruction, and on every hand there seems to be a remarkably unanimous opinion that the soldiers should be settled on the land wherever possible.

No doubt there are many and plausible reasons for this plan and if properly carried out it should be successful. We would all be delighted to see our warriors settle down to farm life, but will they be satisfied? Will those cheery homes, the gifts of a beneficent and thankful people, remain occupied; or, as is happening all over Eastern Canada to-day, will those dwellings be abandoned after a generation or two, the windows boarded and fields let to neighbors for pasture, until they become overgrown with red spruce and juniper?

To give you a concrete instance of what I mean I shall state some unpleasant facts about the "Mira" district of Cape Breton, where my home is; facts that tend to give one a very pessimistic outlook for the future.

This section was almost wholly colonized by Scotch Highlanders at the beginning of the last century. These with a few scattered English settlers form the bulk of the present-day population. Stolid, respectable, church-going people who have generally made good, but who, one by one, take the trail that leads to the bright lights and busy streets of the city, and seldom, very seldom, return. The soil of this region is fertile; fairly good crops are grown every year; an excellent market is near at hand, and farming, especially sheep-raising and dairying, is very profitable. During the past few years the telephone has found its way into almost every house, saving untold time and worry and providing a ready means for social intercourse. The talking machine helps to make lonely hours fly, and brings the world's most prominent entertainers into our homes, while the daily papers link us very close to the outside world. Sufficient churches to provide grace for the sinners and schools to impart knowledge to the ambitious are scattered throughout the countryside. Ideal conditions, you would say, for rural life.

But the most central church, that of St. Columba at Marion Bridge, which was formerly strong and self-supporting, is now dependent on the augmentation fund of the Presbyterian Church for a share of the pastor's salary. The services are poorly attended, barely half the pews being occupied, for the simple reason that there are no people to come. Even the gallery, the favored seat of our younger days, where we sat to the chagrin of our godly parents, is abandoned and only used on special occasions.

Then take the public school at the same centre. Where some fifteen years ago there were sixty pupils it can now hardly muster a roll-call of thirty, while in the immediate vicinity several other schools, in which a few years past we could find twenty or thirty lusty youngsters conning over their lessons, are closed most of the time.

Again, we had the temperance order, branches of which flourished in practically every locality where young and old met, had a good time, sang, made speeches and debated. In fact many prominent speakers of to-day look back to the debates in the old unpainted school house as laying the foundations for their later success. Young men and women met and as a result there were marriages, which are getting to be very rare occurrences here now. Even the good old custom of escorting a girl home after services on Sunday evening is fast dying out. Here is the inevitable consequence. Along fifteen miles of His Majesty's highway there are sixteen bachelors, well over thirty, some nearing the half-century mark, some over, who should have snug homes with a crowd of kiddies, but who instead live out miserable lives of monotony and drudgery. God pity the place where bachelors are in the majority!

"Can not the temperance order, the milling frolic, the spelling bee, be revived, you say?" No. "Why?" you ask. Those amusements were all right until the lure of the city with big wages in ready cash, and its amusements, became attractive. What, then, is the remedy? I have attempted to diagnose the case and I feel that an anti-toxin must be prescribed. How can this be done? The only ways are by the provision of better social, educational and domestic facilities for our country people.

The present system of isolated farming is, I think, responsible for the trek cityward. If the farm houses of a section were clustered together to form a village, then a system of lighting, and water-

Continued on page 57

Abraham Lincoln

who was raised on a farm and had a deep sympathy with farmers, declared a tariff producing sufficient revenue for the support of the general Government and adjusted to protect American industry was "indispensably necessary to the prosperity of the American people."

"I believe if we could have a moderate, carefully adjusted protective tariff, so far acquiesced in as not to be a perpetual subject of political strife, squabbles, changes and uncertainties, it would be better for us."

"The abandonment of the protective policy by the American Government must result in the increase of both useless labor and idleness and so in proportion must produce want and ruin among our people."

Under a national tariff, the United States has prospered and become great. A national tariff is essential to the development of the Dominion. Canada cannot exist if legislation for one section is stretched to a point where it ruins another. A tariff is necessary to our industrial development. Industrial development is necessary to agricultural and general prosperity.

Under Free Trade—Where will the Revenue come from?

Canadian Reconstruction Association

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FRUIT GROWING

Apple Scab and Its Cure

By WILLIAM HARKNESS

THIS is the most common and serious disease of apples and is injurious in various ways.

Sometimes heavy losses are incurred at blossoming time, resulting in the reduction of the set of fruit.

Scabby apples are always smaller than clean ones. They do not keep as well, being susceptible to pink-rot and other storage diseases. As they do not cling to the tree they greatly increase the number of windfalls.

Leaves are so affected that they are small and undeveloped and may even fall off.

Thus we have reduction of quality, quantity and size of fruit, as well as injury to the tree, of which the strength is impaired by the unhealthy state of the leaves.

The disease usually occurs first on the blossoms and leaves, then, as the fruit develops, it appears on it. The scab may appear on either side of a leaf, first as small, almost round, brown spots. If the weather is favorable for its spread the spots grow larger until they practically cover the leaf, deforming it, making it functionless and even causing defoliation on a large scale.

If the blossom is infected it practically always falls without setting fruit. When young fruit is infected, it is deformed, cracks and is practically unsaleable. Infection of the fruit may take place any time during the summer, depending on climatic conditions. If it does not occur until late, it may only cause a small spot or two which does not materially affect the fruit.

Some varieties of apples being much more subject to the disease, particular attention should be given to those most susceptible. These are Snow and McIntosh, those less susceptible are Spy, Greening and Baldwin, while the least susceptible are Yellow Transparent, Blenheim, Tolman Sweet and Golden Russet.

The disease passes the winter on the fallen leaves which were diseased the previous summer. In the spring, during damp weather, these leaves send out spores which are so light that they are quickly carried to all parts of the orchard. When the leaf buds open the tender leaves are immediately inoculated. As these spores must have moisture to germinate, anything that tends to retain moisture is a factor in aiding the development of the disease. From these first infections summer spores are produced in successive crops which account for the infection lasting all summer and even into fall.

It can be seen from this that if the old leaves are gathered and destroyed, or plowed under, the danger of the spread of the disease is appreciably diminished.

Since moisture is essential to the propagation of the disease it can be readily seen that it is most likely to spread in spring and early summer, when the ground, trees and leaves are often moist for days at a time. Particular care, should then be given to the orchard at this time.

When To Spray For It

There should be at least four sprayings for this disease. The first one just as the leaf buds are bursting. For this one use concentrated lime-sulphur solution, strength 1.035 specific gravity (= 1 gallon commercial to 7 gallons of water). This must be on before the leaves reach an appreciable size so that they will not be burned.

The second spraying should be given just before the blossoms burst, using concentrated lime-sulphur of strength 1.009 specific gravity (= 1 gallon commercial to 30-35 gallons of water). To this there should be added arsenate of lead, about 3 pounds of paste to 40 gallons of diluted lime sulphur. The arsenate of lead here is for tent-caterpillars, bud-moth and case-bearer. The period of effective spraying is from 1-3 days.

Give the third spraying just after the petals fall, using the same spray mixture as that used in the second. The arsenate of lead here is for the codling moth. The period of effective spraying is 2-5 days.

Spray for the fourth time about two weeks later, with the lime-sulphur alone, strength 1.009 specific gravity. Possibly a fifth time in late July or early August with lime-sulphur alone, (= 1 gallon commercial to 33-40 gallons of water).

Bordeaux mixture may be used instead of lime-sulphur, strength copper sulphate 4 pounds, unslacked lime 4 pounds to 40 gallons of water. Use the arsenate of lead as with lime-sulphur.

To be effective the spray must be on the trees before wet or rainy periods, because the fungicide must be on the trees before the fungus.

Every part of the leaves and fruit must be covered with the fungicide. To obtain this a nozzle giving a driving spray should be used.

As the centre of a tree is always shaded it is the dampest part, therefore it should be sprayed most carefully.

Good pruning helps to keep the disease under control, as it permits the air to circulate through the trees and thus keeps them dryer, at the same time allowing the fruit grower to spray more thoroughly.

WHO SHOULD PLANT AN APPLE ORCHARD

By Prof. J. W. Crow.

THE apple growing industry of the future in Ontario will be developed by men who like the work and who have the perseverance and intelligence to meet the problems encountered. The necessary practice and experience can be acquired as one goes along and the difficulties of financing the business can be overcome by starting in a small way or by putting one's time on other crops while the orchard is growing. The men who should not undertake apple growing are those who do not like the work and those who from lack of experience and knowledge expect to find in it phenomenal profits. The apple industry offers perhaps as good opportunities for profit as are to be found in any line of agriculture or horticulture, but is at the same time no more profitable on an average than any other well-managed business; neither should encouragement be offered to land speculators, many of whom in the past put out misleading information as to profits to be made. The success of the industry will depend on—1. The man. 2. His local and farm condition. A man who understands orchard work and has a liking for it can make a success of apple orcharding as a side-line in general farming, in stock farming, or in dairying, although it may be pointed out that many dairy farmers find it does not pay to neglect their herds in order to care for an orchard. Orchards below five acres in size are likely to receive very little attention on most farms, and farmers who wish to develop apple orchards as a profitable side-line should plant not less than ten acres if possible. Orchards ranging in size from ten to twenty-five acres can be conducted as profitable side-lines on many farms.

The commercial apple growing industry is developing along two lines. There are now to be found quite a number of orchards ranging in size from forty acres up to one hundred and twenty-five or larger. These constitute highly specialized businesses and are sound, economic propositions, provided one is so situated as to have at hand the extra labor required at picking time. The chief difficulty with an orchard of this class is that a great deal

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of help is required at certain periods of the year, while at other periods there is little or no work to be done. The problem, therefore, becomes one of adjusting apple orcharding to other lines of production so as to equalize the distribution of labor throughout the year. It would appear that an excellent system of diversification could be worked out by using strawberries, raspberries, currants and gooseberries along with apples or other tree fruits, excepting cherries. Cherries conflict in picking season with the small fruits, but can be handled along with apples unless strawberries and raspberries are preferred. Some of the most successful fruit farms are those which grow a general list of fruits, and by intelligent combination a fruit grower can stick to his own line of work and secure at the same time a satisfactory degree of diversification.

STRAWBERRIES TO PLANT AND WHY

(Experimental Farms Note.)

STRAWBERRIES are grown either for home consumption or for market. While those grown for market should be as good as those grown for home use, the fact is that in some cases those produced for market are grown more because of their productiveness and shipping quality than because of their flavor and general palatability.

The most popular variety, taking the whole of Canada, is undoubtedly the Senator Dunlap. This is a very hardy variety, and the fruit is handsome in appearance, good in quality, and is an excellent variety for canning. It is desirable both for home use and market. Like all varieties, it has some faults, the chief one being that on account of its making such a large number of plants the fruit begins to get small too early in the season in parts of Canada where dry, hot weather often occurs during the fruiting season; hence, where there are such conditions some other sort is desirable, and in the Parsons Beauty and Glen Mary there are two commercial varieties which are succeeding very well in many places in Canada, especially in Eastern Canada. These are both large varieties and keep their size well to the end of the season. The Parsons Beauty is better in quality than Glen Mary and the latter is not very desirable for home use, but both should be tried to determine which succeeds best in the particular locality and soil where they are grown. The Williams is a firm berry, which is a very popular commercial sort in Western Ontario, but is not very popular in most other parts of Canada. It has a white tip which increases its shipping qualities, but lessens its value when it is to be eaten raw. Splendid is a rather early variety which has made a good record in Eastern Canada, and Beder Wood is also another reliable early sort. The Marshall is one of the best in quality, but must be grown under high cultivation in Eastern Canada to get fair crops and is not now much grown on account of its light cropping, but on the lower mainland of British Columbia it does well and is one of the best commercial varieties there. The Magoon is also a commercial variety which is also grown mainly in British Columbia.

The foregoing are the leading commercial varieties in Canada, although to these might be added Sample, Pocomoke, and Warfield as succeeding very well in some places. For the Prairies, a variety called Dakota, rather small in fruit but very hardy, has proved one of the most reliable, though Senator Dunlap also does well if well cared for.

The best varieties for home use in Eastern Canada are Senator Dunlap, Bubach, Parsons Beauty, and Wm. Belt, the latter and the Bubach being large varieties of good quality. In British Columbia the Royal Sovereign, Paxton, and Marshall are three of the best for home use. The two former are English varieties not satisfactory except in the mildest sections of the Dominion. The Everbearing strawberries are particularly desirable for home use, and two of the best of these are Progressive and Americus.

SHORTHORNS IN U.S.

SECRETARY Harding of the America Shorthorn Breeders' Association has compiled a list of the Shorthorn breeders in the U.S. by States. Assuming that the herds in the hands of the 33,147 breeders average 20 head, says Frank Tomson, this would be an aggregate of 662,940 head, to which probably 50,000 could easily be added. Yet this is not a heavy stocking. If each one of Ontario's 145,000 farms of cleared land were to receive the whole bunch of American Shorthorns, there would not be six for each 100 ac...

Both Make Electricity:—

the Power Station Dynamo and the Fiery little Columbias

THE big dynamo whirling in the power station makes electricity for the big jobs—to light the city; to run the factory full of machines; to propel the street cars.

The fiery little Columbia standing quietly behind the scenes makes electricity for all the little jobs—to ring bells and buzz buzzers; to make telephones talk; to run toys for the little folks; to ignite farm engines, autos, trucks, tractors, and motorboats.

THE DRY BATTERY

THE world is so used to having the Columbia Dry Battery always at its beck and call, the little red fellow's work is accepted as a matter of course.

Yet he is really one of the great marvels of the age—marvelous for what he does—marvelous for his power—marvelous for his long life.

Columbia Dry Batteries are appropriately called "The handymen of the world."

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THE Columbia Storage Battery is backed up with a *definite guarantee* that makes certain for the purchaser the actual performance to which his original purchase entitles him.

And if his battery should fail to live up to its guarantee, he is entitled to thorough repairs or another battery without additional cost.

Columbia Storage Battery Service is all around you—it will be well worth your while to drop in and let them show you how they will save you annoyance and expense.

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Famous Root Seeds

Bruce's Giant Feeding Beet, In two colors, White and Rose, a cross between Sugar Beet and Mangel, splendid croppers and unequalled for feeding, easily harvested, and keep well. ¼ lb. 30c, ½ lb. 55c, 1 lb. $1.00, 5 lbs. $4.50, postpaid.

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Bruce's Giant Yellow Mangel, An intermediate variety, heavy cropper, good keeper, of splendid feeding quality and easily harvested. ¼ lb. 30c, ½ lb. 55c, 1 lb. $1.00, 5 lbs. $4.50 postpaid. Also Yellow Leviathan, Giant Yellow Globe, Golden Tankard and Mammoth Long Red Mangels at same price.

Bruce's New Century Swede Turnip, A grand purple top variety, splendid for the table and also for feeding cattle, a grand keeper and shipper. ¼ lb. 45c, ½ lb. 80c, 1 lb. $1.50, 5 lbs. $7.25.

Also Bruce's Selected, Bruce's Giant King, Hall's Westbury, Elephant, Magnum Bonum, Kangaroo and Hartley's Swedes at ¼ lb. 40c, ½ lb. 75c, 1 lb. $1.40, 5 lbs. $6.75, postpaid.

Also Aberdeen's, White Globe, and Greystone Turnip, at ¼ lb. 40c, ½ lb. 70c, 1 lb. $1.30, and 5 lbs. $6.25, postpaid.

FREE—Our valuable 112-page Catalogue of Seeds, Plants, Bulbs, Implements and Poultry Supplies. Write for it to-day.

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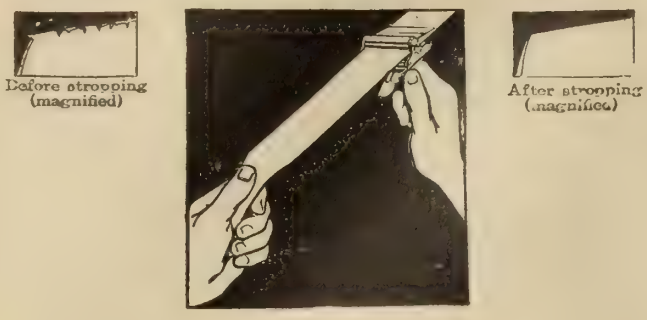
HAMILTON Business Established 69 Years ONTARIO

No edge without stropping



As the farmer becomes more of a business man, he finds a good personal appearance counts greatly in his favor in his dealing with other men.

He realizes that to have a first-class razor, and to enjoy head-barber shaves a razor blade must be stropped. Now, satisfactory stropping can't be done in the old way unless a man has acquired the knack. Not everyone can, and that's why men in increasing numbers are turning to the AutoStrop Razor.

Because of its self-stropping feature, a man can easily keep his AutoStrop Razor sharp. He is never at a loss for a keen blade, for he always has one. This and the fact that it is not taken apart for stropping or cleaning has led thousands of shavers everywhere to speak highly of the AutoStrop Razor to their friends.

If you want to see how enthusiastic men can really become about their AutoStrop Razors, just mention the matter the next time you're in town. The result may surprise you. Any dealer will sell you an AutoStrop Razor, strop and 12 blades complete for $5.00, with the understanding that if it doesn't please you, your money will be handed back without argument.

AUTOSTROP SAFETY RAZOR CO., LIMITED
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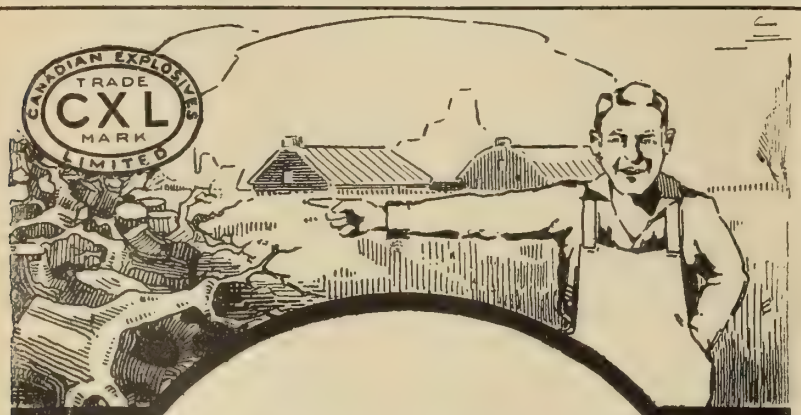
Auto Strop Safety Razor



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This six hours work would have taken a team of horses and two men two weeks.

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will help you clear your land of stumps and boulders, do your ditching and tree planting and save you money.

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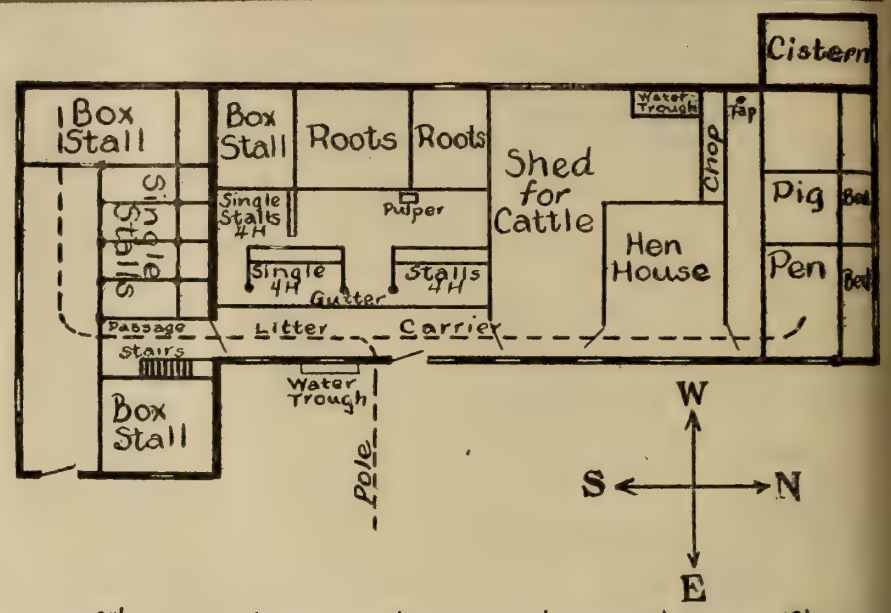
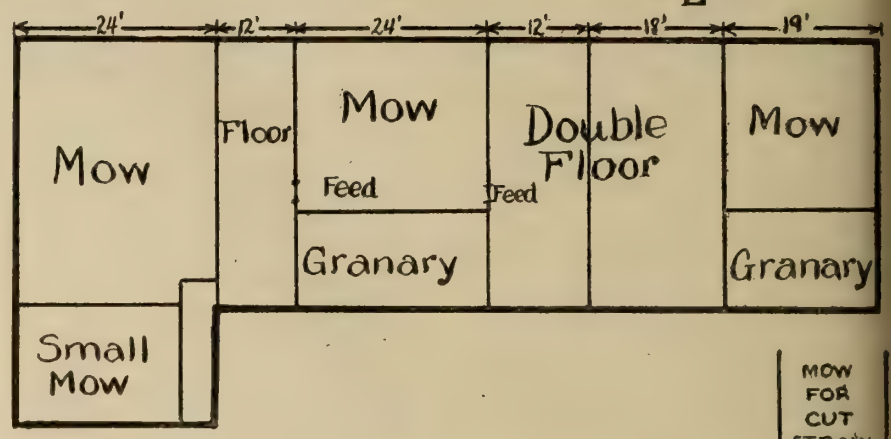
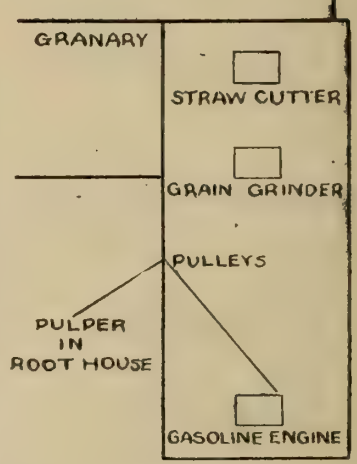
FARM BUILDINGS

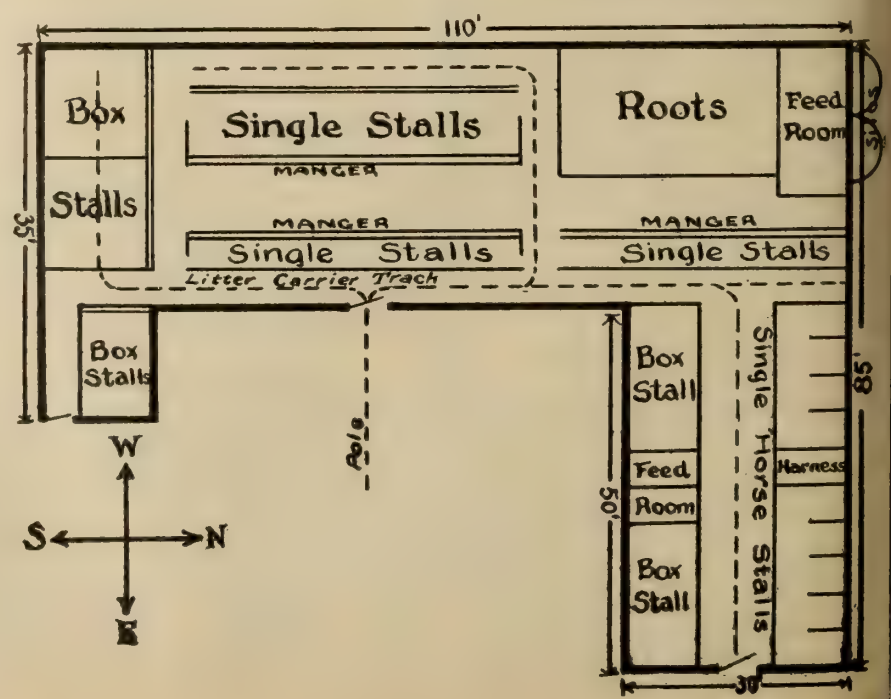




THIS BARN PLAN

HEREWITH we present the plan of the barn in use on the farm of A. J. Henderson, Durham County, Ont. The farm consists of 100 acres. The barn is built on a bank running north and south. The cistern at the west side of the barn supplies water to the pig pen and in shed. The windmill near the barn supplies water for basins in front of the cows and a trough at the stable door. There is a stonewall partition between the horses and the cattle. There are four plans here, the top one showing the basement layout, the second the barn floor layout, the little one opposite this reading, gives the situation of the 6 H.P. gas engine power, while the lower one is a suggested arrangement for a larger farm.





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For Building and Repair Jobs on the Farm

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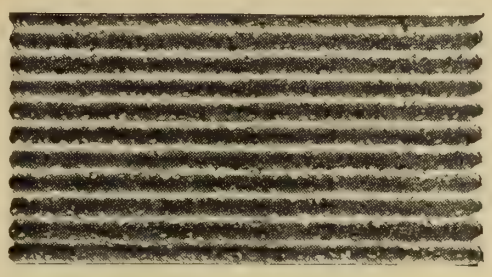
FOR THE BARN

"Acorn"
***Corrugated Sheets**

The most durable barn roofing made. Can be put on over old shingles or on furring strips.

28 gauge, per square..$8.25
26 gauge, per square.. 9.00

See note at bottom re freight allowance.



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Make a roof that is absolutely water-tight and weather-proof. Fire cannot touch it—lightning cannot strike it. Easy to lay—the shingles lock into each other without effort.

Price per square (actual covering capacity), $10.00

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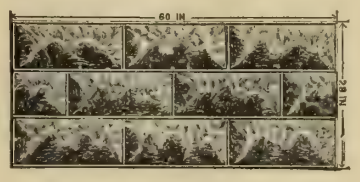

The large sheet styles can be used over any kind of old sheeting. It is very useful for covering over even rough-cast surfaces which have cracked and bulged.

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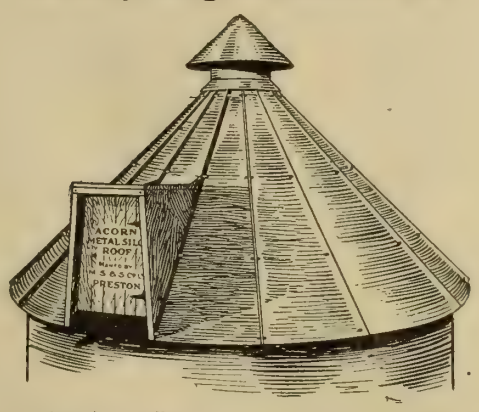

The saving in ensilage will soon pay for this silo roof. You can buy a 12-foot top as illustrated for $58.00, and it is so constructed that it can be erected in a few hours' time.

The "Acorn" Ventilator will draw off the foul air and keep the barn cool and sanitary. Height over all 10 ft. Diameter 24 in. Base 30 in. square.

Price, $33.00.

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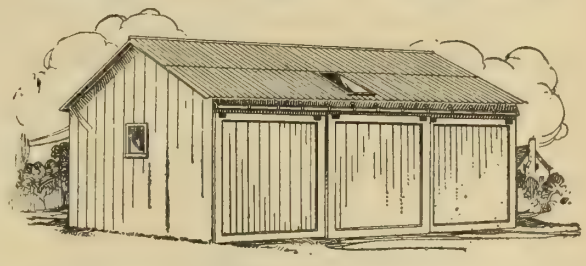

Have a separate building for your motor car or tractor. We furnish portable buildings in any style or design for the safe keeping of valuable farm machinery. The building shown above, with metal roof and all necessary materials 20 ft. x 36 ft. sells for $396.00 Two men can erect this building in 3 hours' time.

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This bowl will work satisfactorily at any height desired, as it is not controlled by a float valve. Suited for either overhead or underground supply pipes.

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ACORN HOG TROUGHS

Are built of heavy gauge galvanized steel, with malleable ends. They are very staunch and rigid. A 4 foot trough sells for $3.10.

We manufacture a complete line of building materials for the farm

STEEL TRUSS BARNS - READY MADE BUILDINGS
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Write for our Free Catalogue on Farm Building Supplies

On all items marked ★ we allow freight to Railway Stations in Ontario, South and East of North Bay, also to Railway Points in Labelle, Pontiac and Wright Counties, Que.

Please send me your literature about the goods I have marked.

- ___ Preston Steel Truss Barns
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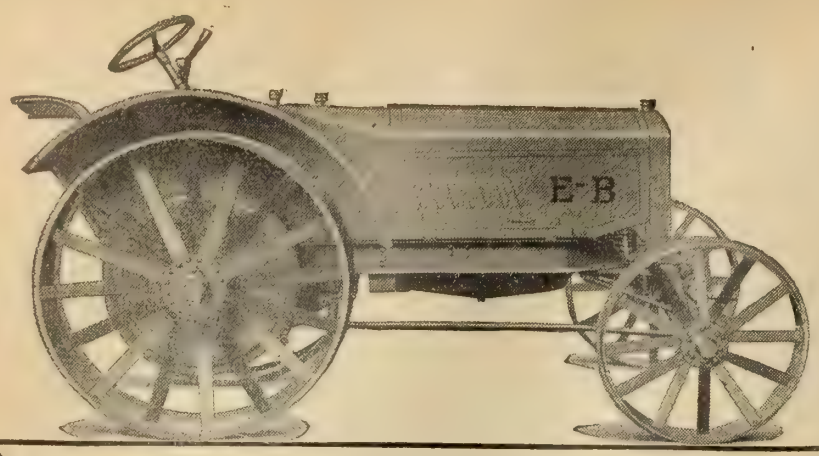

CANADA Demands this TRACTOR

because it meets the needs and difficulties of Canadian farming.

EXTRAORDINARY POWER—Rated at 12-20 h. p., Society of Automotive Engineers' basis, the E-B Model AA develops 15-25 h. p. The E-B 4-cylinder, kerosene-burning motor *pulls three plows in ordinary soils.*

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ECONOMY—E-B Patented Transmission on Hyatt Roller Bearings carries maximum power from motor to drive wheels. Motor burns kerosene.

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See your E-B dealer or write us at once

Emerson-Brantingham Implement Co., Inc., Regina, Sask.
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E-B 12-20

S.A.E. Rating Model AA

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Studebaker Combination Passenger or Delivery Trucks, equipped with MOVABLE side seats, built to carry twelve people.

These cars are being sold at a very attractive price. They were used by the Royal Air Force, and have always been kept in good condition.

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Wool Profits

Don't lose part of your wool money by shearing the old-fashioned way. Shear with a machine. The extra wool secured from your sheep soon pays the cost of one. You secure better wool more easily and quickly and benefit your flock. Get a Stewart No. 9 Ball Bearing Shearing Machine. If dealer can't supply you send us his name. Write for catalog.

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FARM ENGINEERING

The Farm Car as a Source of Belt Power

By L. G. HEIMPEL, B.S.A.

THERE is no farm upon which the addition of belt power is not a convenient thing and where the purchase of an engine is not a paying proposition. There are various uses for a gas engine on the average farm and the amount of power required for each of them may range from one-quarter of a horse-power for turning a cream separator to twenty horse-power for threshing. This makes the choosing of an engine a very hard matter.

The great majority of the work on a farm requires an engine of less than four horse-power, and two horse-power is sufficient to do all the farm work outside of threshing, silo filling and grinding. Since these last named heavy jobs are of short duration it does not pay to keep a ten or fifteen horse-power engine in daily use for pumping water when a two horse-power would do the work. It is becoming more and more necessary that we have our own power to do this work and the only way out seems to be either buy another engine or to use the farm car.

There are several devices on the market now for the purpose of converting the farm car into a belt power plant. All of them will work, some better than others, but all are expensive, and while some are not very hard on the auto others put a strain on parts of the car such as it was not made to withstand.

In the accompanying cut we are showing a sketch of a home-made device which is giving good satisfaction wherever used, is inexpensive to make and embodies most of the good points of such a device while doing away with the undesirable ones. Let us go over these points and see what would be for and what against using a car for belt purposes.

First of all a device which is to make use of the auto for belt purposes must not interfere with its serviceability as a road vehicle. The farm car's greatest asset is as a time saver and we cannot afford to let anything stop us from a trip which may have to be made at a moment's notice. Second, anything for which the car may be put to use must not subject it to any strain greater than the road strain, and it must not subject the car to any strains for which the car was not designed. Third, any device used must provide the car with additional cooling provision because a large part of any engine's cooling system depends on the speed with which it passes through the air when on the road. Any automobile engine left to do heavy work with the car at a standstill will soon become overheated. Therefore, extra cooling must be provided. Whatever is used though must not interfere with the car's mobility at any time. The device shown complies well with all these demands and it will pay any man who is mechanically inclined to look it over as a possible solution for his power puzzle.

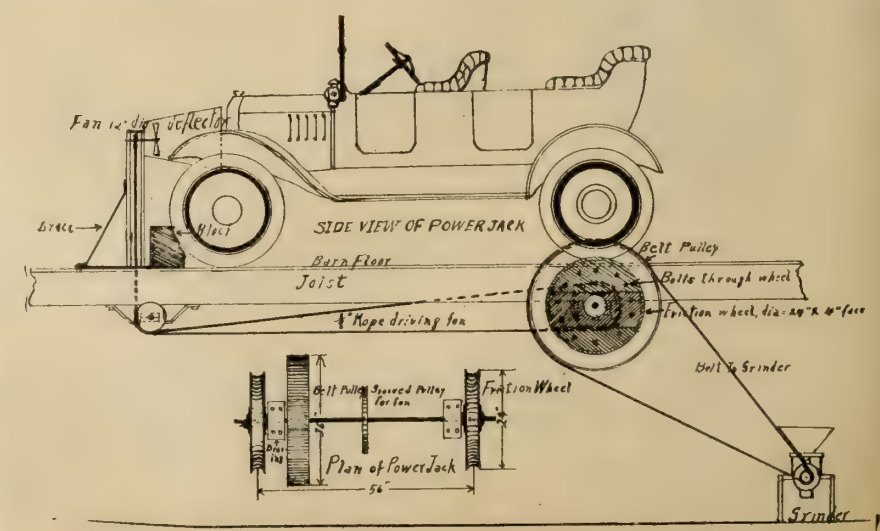
This belt power jack will utilize the power of an auto in exactly the same way as the power is used when the car is on the road. The power is delivered to the jack through the road wheels by friction drive. The friction wheels can be made of two two-inch planks and two one-inch boards, one on each side of the planks. For friction wheels twenty-four inches in diameter the planks should be sawed about 26 inches long and the pieces bolted together to make a square piece 26 inches square and 6 inches thick. The pulley may now be sawn out by a band saw. A groove 1½ inches deep and 5 inches wide is now turned out on the lathe. The wheels are secured to the shaft by means of plates bolted one on each side of the wheel and keyed to the shaft. The bearings for the shaft may be of metal or good hard maple wood, and they may be set in hangers below the floor or simply bolted to the joints. In installing the shaft and using 24 inch friction wheels it is necessary that the distance from the centre of the shaft to the floor on which the car stands be two inches. This will allow the wheel to project two inches above the floor.

The belt pulley shown is 36 inches in diameter. Where such a large size is used it is of course necessary to cut a hole in the floor to allow it to come through. This size of pulley is shown because with the rear wheels of the car going at the rate of 30 miles per hour the grinder with a five-inch pulley would run at the rate of about 2,600 revolutions a minute.

There is room on the jack-shaft for several pulleys of different sizes which will supply power to different machines requiring different speeds.

For the extra cooling fan nothing will answer better than an extra fan of an automobile fastened to an upright and driven by a one-quarter inch rope from the jackshaft. The principle of running the rope around a corner is shown in the drawing. Only one guide pulley is shown beneath the floor; two are needed and will work best when close together. The blast from the fan should be directed through a deflector of tin or sheet-iron so that the radiator will get the full benefit of it.

When using the car as a source of belt-power all that is necessary is to drive the car on to the friction wheels of the jackshaft, the front wheels resting against a large block secured to the floor so as to hold the rear wheels of the car on top and a little forward of the centre of the friction wheels. All that



A diagram showing the arrangement on the barn floor for power—from the car

is needed is to set the throttle so that the engine runs the wheels at about 20 to 30 miles an hour. When the load is applied the speed may be regulated by experiment.

The use of the car for belt-power is not as hard on it as road work, because the running is very smooth, there are no jolts and no strains due to unevenness of the road. It is an easy matter to have the engine of a Ford deliver from eight to twelve horse-power with such a device.

With it one can saw wood, grind grain and cut feed in a very satisfactory and economical manner, while in winter time the device may be of daily use to pump water, pulp roots or in fact drive anything which turns around.

OVERLOADING THE TRACTOR

By A. P. YERKES,
U.S. Tractor Expert during the war

VERY few farmers would continue working a horse with what they knew to be an overload. Yet there are a great many farmers who are deliberately and knowingly operating a tractor under an overload. While there is not the same humanitarian principle involved in the case of the tractor as with the horse, it is usually an even more serious matter to the farmer's pocketbook to overload a tractor than a horse. In the first place, a tractor is worth more than several horses and a horse which has been overworked, "pulled down," or strained, will usually recuperate with proper care and nourishment. In the case of the tractor, overloading will almost invariably result in a direct expense for repairs, etc.

A great many men seem to feel that because a tractor is a machine it is impossible to overload it and that so long as it will struggle along under a load, it is all right to allow it to do so. This is a very mistaken idea. A farm tractor is designed to do a certain amount of work. The bearings and various parts are made sufficiently strong to meet the requirements of normal operation, that is, to stand up under the tractor's rated load with reasonable allowance for overload. Of course, it would be possible to make the bearings and various parts capable of withstanding a continuous overload, but this would mean not only additional expense, but also a much heavier machine, and the purchaser would probably object to both.

Not only are the various parts of the tractor designed to meet the requirements of its rated horse-power with a reasonable margin of safety, but the oiling system is also designed in the same manner. So long as the machine is in perfect condition and the oiling system working perfectly, a full load or even some overload would not cause any trouble, but there are very few operators who keep a machine in perfect condition, and operating under an overload when the bearings are slightly worn, the oiling system not functioning perfectly, or where a poor grade of oil is being used, may do a considerable amount of damage within a few hours.

Many men cannot understand why a tractor motor should not give a long period of service without overhauling, since the motors in automobiles and motor trucks will operate satisfactorily for months. This difference is largely because of the much severer conditions under which the tractor motor works as compared with the automobile and truck motors. A tractor at field work is usually called upon to develop almost constantly in the neighborhood of 75 or 80 per cent. of its rated power and in many cases even more. It is required to maintain this load hour after hour without any chance for rest. In the case of an automobile or motor truck, the motor is developing only 15 or 20 per cent. of its rated capacity during the greater part of the time. It is only on exceptionally steep grades, bad roads, or at extremely high speeds that anywhere near full power is required or developed, and the conditions are only encountered occasionally. The automobile and truck motors, like the tractor motor, are designed to withstand pressures and strains which would be incurred at its rated capacity plus a reasonable amount

This Engine Will Save Money and Increase Production

Production is the dominant feature on the farm today and the "Z" Engine is your means to speed up production.

The Fairbanks-Morse "Z" Engine

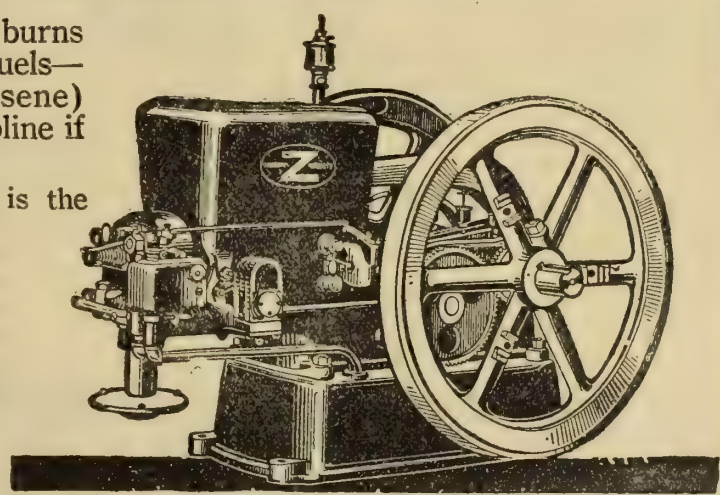
makes every detail of farm work easier and quicker. It operates the lighting plant, the water system, does the milking, the churning, the sawing and a score of other chores—it does the work of several horses and does it better and quicker and more economically.

You need the "Z" on your farm—it's indispensable. Over 200,000 farmers have found it so. There is a type to suit your requirements, in either the

6, 3 or 1½ Horse Power

The "Z" Engine burns the cheapest of fuels—coal oil, (kerosene) distillate or gasoline if desired.

Your local dealer is the man who knows the Type "Z"—he is the man who stands behind this engine and its performance to guarantee you the fullest satisfaction.



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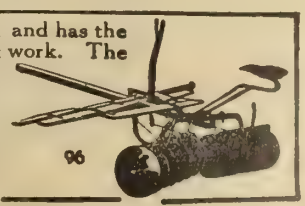

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For Gasoline Engines, Tractor, Auto or Stationary
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—very heavy body, resists cold, won't thin out with moisture
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A Correct Lubricant for every Farm Machine

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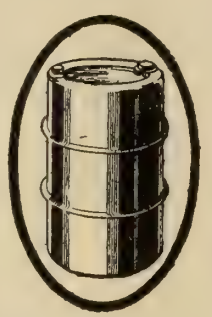
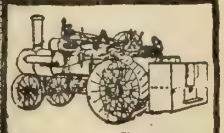
Farm machines differ in structure and in service and so require different types of oils and greases. Farm tractors require different lubricants from trucks and automobiles—different parts of the same engine or motor having different duties to perform cannot be properly lubricated with the same oils and greases. Good lubrication will save you hundreds of dollars every year over poor lubrication. Imperial Farm Lubricants provide the right kind of oil or grease for each farm machine. From the Imperial Line you can select a lubricant that gives the greatest operating efficiency for each.



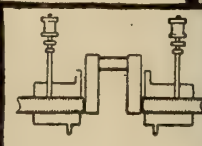
Look over the Imperial brands recommended here. These names are all recognized by Canadian farmers as standards of high quality. Imperial Farm Lubricants are scientifically formulated and carefully made. There are no superiors and few equals. Properly used they will increase the years of service from your automobile or tractor and all the other machines on your farm. Imperial Lubricants come in one-half, one and four-gallon sealed cans; in steel half barrels and barrels. The kind you want in the size you need can be delivered to you promptly anywhere at any time.



For Steam Cylinder Lubrication, whether Tractor or Stationary Type.
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication

IMPERIAL OIL SERVICE

Even though you are using Imperial Farm Lubricants exclusively, we hope that you will talk over your lubrication needs with the *Imperial Oil man* near you. He is well posted on farm lubrication. Put his knowledge to the test.



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For Grease Cup Lubrication of Bearings, a clean solidified oil high melting point.

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Over There—
Over Here

STAG Chewing Tobacco is appreciated by both of Canada's war units —those who fought in Flanders and those who served at home.

It is also enjoyed by civilians of all classes throughout Canada and is recognized as being

"Ever-lasting-ly Good"

of overload. Since these motors are operated at such a comparatively small fraction of their capacity most of the time, the wear on their bearings is very slight so long as a fair degree of lubrication is maintained. Automobile and truck motors will not stand up under a continuous full load or an overload any better than will the tractor motor.

Don't Expect Too Much

Owners should keep in mind at all times the fact that the tractor motor is developing a large percentage of its power at practically all farm operations and should be careful not to require it to do too much.

In this connection, it might be pointed out that overloading a tractor at field operations does not usually increase the amount of work done to so great an extent as many farmers are led to believe by judging simply by the size of the implement pulled. Take plowing, for example. A tractor which has been designed to pull (and has no difficulty in pulling) three plows under ordinary plowing conditions will very seldom do one-third more work per day if another plow bottom is added. In the first place, the weight of the tractor and amount of grip afforded by the drive wheels have been designed to take care of a normal draft of three plows. Any decided increase over this amount of pull will increase the slippage of the drive wheels very appreciably. As a consequence, the machine does not travel so fast as when it is pulling only its normal load of three plows. Then overloading will very frequently cause the motor to run at a speed below that for which it is rated. This, of course, reduces the speed of the outfit. As a consequence, the tractor will not travel so many miles in a day and the increase in the amount of work accomplished by such overloading is very frequently no more than could be accomplished by about an hour's extra work with the three plows. This hour will very frequently be saved through avoiding the delays which usually accompany overloading.

That the above statements are not mere theory is shown by a statement in a bulletin issued by the U.S. Department of Agriculture on the use of tractors in Illinois. This bulletin states that the records of a number of men who had the same make and size of machine, some of whom were using the outfits with two plows and others requiring them to pull three, were tabulated in order to see what effect the overloading had upon the general results being obtained with the tractors. The following quotation shows the results:

"The reports of a number of men who were thus overloading their machines were tabulated and compared with the results obtained by other men who owned the same make and size of tractor, but who were requiring their machines to pull only normal loads. This comparison showed that the repairs on the overloaded tractors were considerably higher, more time was lost per day with these outfits, and the estimated life of the overloaded tractors was considerably less than for the machines pulling normal loads. At the same time the increase in ground plowed amounted to only about 1¼ acres per day; that is, the additional plow covered about one-half as much ground in a day as did each of the two plows which constituted a normal load. The gasoline consumption per acre averaged somewhat lower for the overloaded machines, as would naturally be expected, since the tractor would not have to travel so far to plow an acre. However, the depth plowed was not so great, and it is reasonable to suppose that the plowing conditions were generally favorable or the third plow would not have been tried. The increased acreage per day and the slight saving in fuel together would not offset the increased repairs and the value of the time wasted from trouble with the outfit. Overloading a tractor is inexcusable save in exceptional cases where speed in completing a job is of the utmost importance. If such speed is required regularly, the work could be done more cheaply and satisfactorily with a larger outfit."

On the whole, it may be stated that

where it is desired to speed up work, it will usually be much more satisfactory and accomplish the work in a fewer number of days to work a longer time each day with the normal load than to attempt to cut down the time by adding an overload.

It is much more satisfactory to operate a tractor which is kept in good condition and which is always ready for work than one which requires constant stops for readjustments and repairs. A good tractor in the hands of a competent operator when working under a normal load will cause very few delays, but the same tractor overloaded is almost sure to require an excessive amount of repair and a great deal of unnecessary expense and delay.

The question may be asked: "How is a tractor operator to know what is a safe load for his tractor?" This must be determined for each machine and for each set of conditions under which it is working. A load which the tractor can pull quite easily under some soil conditions will be an overload in other cases. A skilled operator can usually tell by the sound of the exhaust and the general operation of the machine when it is working hard. The slackening of the speed will also indicate an overload, but one of the best ways of telling whether a tractor is being loaded too heavily is by its ability to start the load. When it is necessary to speed up the engine and drop the clutch in with a jerk, thus using the momentum of the fly wheel to get the outfit in motion, it is safe to say that the machine is overloaded. A tractor should not be required to pull a load greater than it can start smoothly and without jerking when the clutch is thrown in. A good clutch should take hold of a load gradually and without jerks and if the load is not greater than the machine should carry, it should start moving without slackening the speed of the motor. One of the worst features of overloading is the fact that the outfit is subjected to such tremendous jerks and strains in getting an overload in motion. This subjects the entire machine or practically every part of the machine to terrific strains and pressures, which are likely to cause damage to the gears, bearings, or other parts.

RURAL CONDITIONS IN EASTERN CANADA

Continued from page 49

works could be easily maintained. There could be a library, a school where attendance would be compulsory, in fact as well as in name; meetings would not have to be adjourned so often for the lack of a quorum and there could be perhaps a co-operative store, mill or factory.

I know you may regard this proposal as impractical. You say, "Think of the distance a farmer would have to go to his work every day," for, of course, the farms would have to be some distance away. Well, what about the city worker, or the miner who perhaps must walk a mile to reach the scene of his labor? Would not a community car obviate any difficulties on that score? Perhaps you regard these views as socialistic. They may be, but I firmly believe that some such scheme is necessary to prevent Canada being shorn of her agricultural possibilities.

There is in this community a hall dilapidated, unsafe for any public gathering, its windows all broken in. It was built during the halycon days of rural fraternities and served for many a social time, but is now unused. For us that building has a potent lesson. It shows that once the novelty has worn away, people are not going to trudge through rain and sleet and bad roads to attend meetings of any association; that to be of lasting value it should have been within easy reach of all, and the only way to have that condition is when people are "dwelling together in unity" and the present system of isolated farming done away with.

DURHAM BOYS WIN

IN the recent judging contest started at the Toronto Livestock Show, the Durham boys, under G. A. Williams, B.S.A., of Port Hope, won out with a total of 1,925 points out of 3,000. The boys were: W. E. Snowden, R. J. Fallis, A. R. Ferguson.

A Handsome Horse Stable

Our good Canadian farmers take pride in their horses. They take pride in having their horses looking well. And horses always look their very best in a handsome stable. You would be glad to show a visitor or buyer through a stable like the one in the picture above. The open construction of the steel guards allows the sunlight to flood into every stall. The steel fittings, too, will always look well because the steel is practically indestructible. It cannot be disfigured by cribbing or kicking.

Let us send our Barn Book which shows many fine photos of horse stables and describes these steel fittings completely.

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BIG REDUCTIONS

30 x 3½ Inner Tube.....$ 2.10
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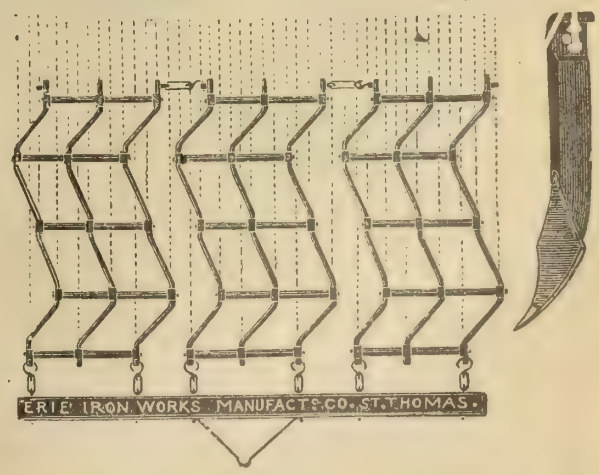
ERIE PATENT LANCE TOOTH HARROW



3 Section Complete $25.00

4 Section Complete $32.00

Erie Lance Tooth Harrow is the finest and most useful article that can be placed on a farm. The teeth are so shaped that they tear rough ground and culivate and make the finest seed bed possible. Once used on a farm, and it will be the last implement parted with. Made strong and adapted to the roughest usage. Supplied in sets of 2, 3, or 4 sections, 15 teeth to a section. Each section covers 3 feet of ground in width.

MANUFACTURED BY THE ERIE IRON WORKS LIMITED, ST. THOMAS, ONTARIO

Spoiled Cakes Cost Money

Flour, eggs, milk, butter and sugar are high in price. A spoiled cake or batch of biscuits costs money.

To make sure of baking success use pure, strong, *double-acting*

EGG-O Baking Powder

The heavy Government Standard flours need the strength of Egg-O to make a light baking. Egg-O has two actions. It rises in the mixing bowl when cold water or milk is added and continues to rise in the heat of the oven, thus making a light cake doubly certain.

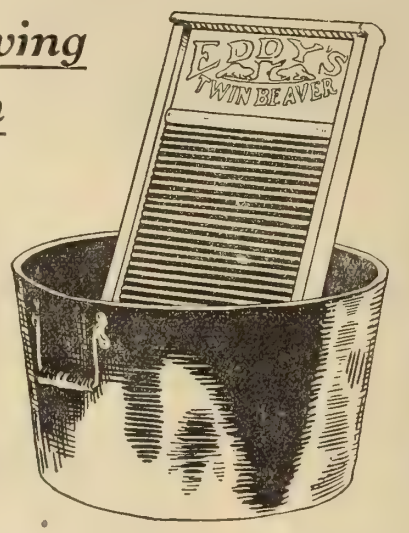
You can use sweet milk, sour milk, buttermilk or water with Egg-O—a different and better baking powder.

Egg-O Baking Powder Co.
Limited
Hamilton, Canada

23

A Labor Saving Combination

"IT is the last straw that breaks the camel's back." So runs the old proverb. And it is the little *extra* efforts which tire you out on wash-day.



Eddy's
Indurated Fibreware
Washtubs *and* Washboards

form a combination which save you much extra labor. Indurated Fiberware tubs are much easier to lift and to move about. They keep the water hot for a much longer space of time, because they do not conduct heat as metal does. They are easier to keep clean, because they are made in one piece without joint or seam, and the hard, glazed surface is impervious to liquids or odors. And they cost no more. Last longer, too.

Eddy's Twin Beaver Washboard has a double rubbing surface of Indurated Fibreware which loosens the dirt quickly and saves many tiresome motions.

The E. B. EDDY CO. Limited
HULL, Canada

Also makers of the Famous Eddy Matches B-7

Nursery Emergencies

By ANNA STEESE RICHARDSON

To Make a Mustard Plaster

Mix one part English mustard with six parts white flour and sufficient warm water to make a thin plaster. Spread this on the centre of a square of old linen and fold over the four corners snugly. Rub the baby's skin with sweet-oil or melted vaseline where you intend to lay the plaster, to prevent blistering. Apply the plaster, cover with a large, warm cloth, or in case of cold on the chest, with a bandage wound around the body. Lift the corner of the plaster from time to time to guard against burning. In ten or fifteen minutes, the skin should be slightly reddened, not scarlet. Remove the plaster, pat the skin dry with soft linen and cover with old linen.

To Give a Foot-bath

Use the baby's bath-tub or an ordinary pail. Have the water 105 degrees Fahrenheit. If you have no thermometer, bare your elbow and thrust it into the water. If it is too hot for your bare flesh, it is too hot for your baby no matter what the emergency. To a large pail of water add 2 tablespoonfuls of mustard dissolved in a cup of water. Do not allow the water to become chilled, but be very careful about adding hot water while the child's feet are in the tub. Many babies have been scalded in this way. A mustard bath in the case of convulsions may be prepared in the same way, and the baby's body, but not his head, immersed in the water.

To Give Castor Oil

A very young baby will take castor-oil undiluted. Pour it with a spoon into the side of his mouth so that it fills the cheek, then he will not choke.

It is given to older children in orange-juice, grape-juice, or soda-water.

To Cause Vomiting

Tickle the throat with a feather or give a dose of weak tepid mustard-water.

To Relieve Choking

Never slap a choking child on the back while he is in an upright position. Turn him over on your lap or even hold him by his heels while patting him on the back. Tickling the throat with a feather will sometimes cause him to discharge the foreign body.

To Relieve Earache

Apply hot compresses, preferably a bag of hot salt, or a warm water bottle wrapped in flannel. The ear may be irrigated with a warm boric acid solution, one teaspoonful of boric acid to a pint of water, given with a fountain syringe which is held two feet above the little sufferer's head. The small nozzle should never be pressed against the drum. The injection may be repeated in three or four hours. If the earache persists or is recurrent, take your baby to a specialist.

To Treat Burns

For mild burns which merely redden the skin, apply sweet-oil and lime-water in equal proportions and cover with several layers of sterile gauze. If the first layer of skin is destroyed, raising blisters, there is danger of infection. Cover the burn with a piece of sterile gauze, soaked in a creolin solution—one teaspoonful of creolin to one quart of sterile water.

To Lift a Baby

Grasp the clothing around his feet with the right hand and slip the left hand under his body, so that it supports spine and head. In bathing, hold head out of water with left hand and rinse with right.

Older children running about, should be lifted by placing your hands directly under the arm-pits—never by the wrists.

To Take a Baby's Temperature

An infant's temperature may be taken with a clinical thermometer inserted in the rectum or tucked in the creases of the groin. The thermometer is inserted in the rectum like the tip of a syringe and allowed to remain two minutes. It must lie in the flesh of the groin for five minutes.

General happiness is a pretty sure sign that all is well with a baby.

Normal temperature in the rectum varies from 98 degrees to 99.5 degrees Fahrenheit. It may even go as high as 100 degrees for a short time without indicating illness. If it remains several hours at 100 degrees or rises above that point, summon your doctor.

How to Use Hot-water Bags and Ice-bags

Never pour boiling water into bottles or rubber bags. The bag may burst, the bottle become uncorked, and your baby be badly scalded.

Use water at a temperature in which you can hold your hand, half-fill the bag and cork tightly.

Never lay a rubber bag or bottle next to your baby's flesh, but separate them by a warm cloth.

To prolong the life of your hot-water bag, when not in use hang upside down with stopper removed.

Mother Questions Answered

The fontanel or soft spot on top of your baby's head will begin to close toward the end of his first year. It should be entirely closed at two years.

Pacifiers are dangerous because a young baby draws in wind while sucking them. Eventually they spoil the shape of the mouth and may cause adenoids.

Cough syrups should not be given to babies because they do not relieve the cough, only drug the baby and deceive mother and doctor as to the patient's true condition.

Baby's nose or mouth should never be wiped with a handkerchief used by any one else, because handkerchiefs are germ carriers.

Baby should not be overdressed, because it makes him restless, and causes perspiration, followed by chill and cold.

Baby may be changed to short clothes at four months if the weather and heating system of the house permit. He is more comfortable and develops more rapidly if his feet are free for kicking.

If your baby frets when you stop the night feeding, give him a drink of warm water for a few nights.

No baby or young child should sleep with an adult. Babies may be smothered. Older children become overheated and restless.

Screen your house. Among the diseases carried by flies are diarrhoea, infantile paralysis, diphtheria, measles, typhoid, and scarlet fever.

If soiled or wet diapers are pinkish in tinge, give your baby more water to drink.

Do not allow your child to sleep on one side. Change from left to right, and always see that his ears are laid back snugly when you tuck him in.

If your baby's bowels have not moved during the entire day, do not fail to give him an enema before putting him to bed for the night. He will not sleep well without a bowel movement.

Train your baby to amuse himself with his toys. This inculcates the habit of self-reliance and resourcefulness. A young baby does not need entertainment of any kind.

Baby Ailments and Their Care

To fill an ice-bag or cap, chop the ice fine, run water over it to reduce sharp edges, fill the bag almost full, stopper tightly.

When the ice-bag is not in use, dry thoroughly, dust inside with talcum powder, shake thoroughly, blow up like a balloon, and stopper quickly so air will not escape. Keep in an air-tight box. If you will open up the box at least twice a year and treat the bag in this way, you will not have to buy a new one in case of emergency.

How to Give an Enema

For an infant, use the small bulb syringe which holds between one and two ounces. Usually one bulbful of plain warm water will stimulate the lower intestine of a very young child. In case of chronic constipation when the movements are very hard, a sweet-oil enema may prove soothing. Use the bulb syringe, with one tablespoonful of sweet-oil.

For older children, you can use the ordinary fountain syringe with the infant size tip. Warm soap water suds, glycerine or turpentine can be added to the water when immediate action is desired as in convulsions. A pure white soap should be employed to make the suds. If glycerine is used, allow one-half teaspoonful of glycerine to each tablespoonful of warm water. A few drops of turpentine are added to a cup of warm water.

When to Send For the Doctor

When the baby has diarrhoea, fever, convulsions, chills, a sharp, barking cough rattling in the bronchial tubes, or a rash of any sort.

When he has been exposed to any contagious disease like measles, scarlet fever, or whooping-cough.

When you find it impossible to remove by simple means any foreign body in the ear, nose, eye, or throat, especially if a baby is choking.

To Determine the Nature of Your Baby's Cry

Crying can be traced to habit, hunger, temper, pain, and illness.

The habitual cry is quick, loud and petulant and stops the instant a baby is taken up.

The cry of temper is sharp, insistent, strong, and accompanied by kicking. It ceases when the baby gets what he wants.

The hunger cry is continuous and fretful, usually accompanied by sucking of fists, clothing, or bedding.

The cry of pain is sharp, shrill, and strong, usually intermittent, accompanied by jerking and drawing up of limbs.

The hoarse, throaty cry which indicates cold, croup, or bronchitis demands immediate attention.

The most significant cry of all is the low, sad wail or moan of the baby whose strength is ebbing. No mother fails to recognize this and summon medical help.

Columbia Records

Spring Music

THE gaiety, the beauty and the dear youth of spring—"When birds do sing—sweet lovers love the spring", quoth Shakespeare — what a time it is to bathe our souls in music—to let sweet sounds refresh our spirits as spring showers do the winter worn meadows. Some of the world's most exquisite musical gems have been inspired by this gentle season—and are caught with all their ethereal grace on Columbia Records.

Columbia Records Grafonola

Ask your Dealer to play these Columbia Records for you:

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SPRING SERENADE (P. Lacombe), Prince's Orchestra, and **THE LADY PICKING MULBERRIES** (Kelly) Prince's Orchestra. *A1805, 10-inch 90c.*

SPRING'S AWAKENING, (Sanderson), Felice Lyne, **A DREAM FANCY** (Marshall), Felice Lyne. *A5656, 12-inch $1.50.*

SPRING SONG, Carolina White, and **SWEETEST STORY EVER TOLD** (Stults), Carolina White. *A1432 10-inch $1.00.*

SPRING SONG, (Mendelssohn), Pablo Casals, Cellist, and **APRIS UN REVE** (Faure), Pablo Casals, Cellist. *A6020, 12-inch $1.50.*

SPRING SONG, Song without words No. 30 (Mendelssohn) Prince's Orchestra, and **LULLABY** (Brahms), Stell, Lufsky and Schultze, Violin, Flute and Harp Trio. *A1304, 10-inch 90c.*

SPRING SONG, Song without words No. 30 (Mendelssohn) Ellery Band, and **DRAGON FLY MAZURKA** (Strauss) Ellery Band. *A1388, 10-inch 90c..*

SPRING VOICES, Voci di Primavera (Strauss), Florence MacBeth, Soprano, and **I'VE BEEN ROAMING** (Horn) Florence MacBeth, Soprano *A5811, 12-inch $1.50*

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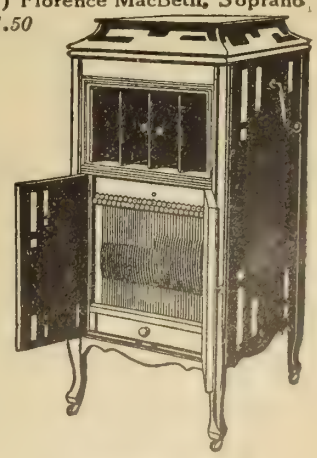
Tone it is that has always made the Columbia Grafonola famous. And what other quality would you have as the outstanding feature of any musical instrument? Columbia tone is the product of matchless care in the seasoning and fashioning of the wood and of basic superiorities in the Reproducer. And it is still further controlled and beautified by the exclusive Columbia "tone leaves". You should really hear Columbia tone to appreciate it. All Grafonolas, whatever the price, have it.



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Columbia Grafonolas are priced from $30 to $325

Any Columbia Dealer gladly demonstrates the Grafonola and Columbia Records for you without obligation.

New Columbia Records out the 20th of the month.

108 COLUMBIA GRAPHOPHONE COMPANY, Toronto, Ont.

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Dissolves "trouble" too!

Grease and dirt are very real household troubles.

But don't worry!

Gold Dust dissolves grease *quicker* than soap—also more *thoroughly* and more *economically*.

Have you ever used such a *gentle* cleanser as Gold Dust? It never scratches nor mars the finest surfaces. Gold Dust is the "soapiest" of cleaners.

Ask your grocer to send you a large or small package of Gold Dust —and make sure the Gold Dust Twins and the words "Gold Dust" are on it.

THE N.K. FAIRBANK COMPANY
LIMITED
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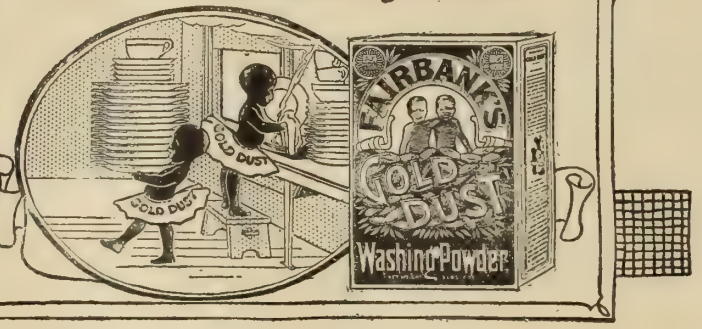
GOLD DUST

The Busy Cleaner

MADE IN CANADA

Let the Gold Dust Twins do your work



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"MORE BREAD AND BETTER BREAD AND BETTER PASTRY"

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"PURITY OATS MAKES BETTER PORRIDGE"

The Farm Wife's Income

By MRS. L. P. KERR

ONE day last summer a little group of girls loitered on my back porch, laughing and chattering, touching on this and that topic and settling it in downright school-girl fashion. I could hear snatches of the talk as I bustled about the kitchen getting supper for my husband and the farm-hands.

"I'll never marry a farmer anyway," Kitty Fleming was saying emphatically. "Nothing but work, work all the time, and getting old and homely long before your time."

"Oh! well I don't know about that," Ellen Brown's quiet voice interrupted her. "Women don't work as hard nowadays as they used to. Look at the electric washing machines and irons, and running water in the houses and cream separators and oh! ever so many conveniences that our grandmothers never even dreamed of."

"Shucks! Nobody works as hard as they did seventy years ago. Anyway it isn't so much the work I'd object to. It's getting faded and washed-out looking and sort of lifeless. Just look at Ruth Foster. Don't you remember how pretty she was before she married Harry? Now she's nothing but a — a frump."

"Well I guess you are right in a way," Ellen agreed thoughtfully, "but just the same I can't see that Ruth herself has changed so much, I believe it's her clothes. None of us would look very well in the old-fashioned things she wears; and Ruth always had such pretty clothes before she was married."

"My mother says Harry Foster is a good husband," interposed a third fresh young voice.

"Good!" Kitty's tone was full of scorn, "Well I suppose he is a good husband," she went on slowly. "He doesn't drink or smash the furniture, and he doesn't beat Ruth or stay out nights; and she gets enough to eat and enough to wear, of a kind. But I tell you what, girls' I'll want more than that from my husband. He won't be doling me out a few measly dollars once in six months and advising me to save them because they are so hard-earned—as though any farmer's wife doesn't know that. I want a nice little flat in the city and a husband who'll hand me his pay-envelope on Saturday afternoon and take me to the movies at night."

A chorus of approval from her listeners greeted Kitty's daring little speech. These girls, farmers' daughters all of them, were deciding against the farm, were already planning to avoid, if possible, the life their mothers lived. I felt that it was all wrong; the farm-homes need those young women, need their youth, their freshness, their enthusiasm. I believe that farm life can be a beautiful and satisfying thing if we all, men and women unite to make it so. There is work of course, but work is good for everyone and surely the labor-saving devices of the present day have done away with most of the drudgery. With automobiles and rural mail delivery, with telephones and phonographs, is there any reason why the country woman's life should be a lonely and monotonous existence? And yet, in a great many faces, in a great many farm-homes, I see lines that tell of restlessness and discontent. True, there are women who would be miserable and unhappy in any environment, but in the case of the wholesome, attractive, home-making woman, I have come to think, with Kitty and her friends, that, many times, it is just "a question of clothes."

Too many farmer-husbands are prone to class among the non-essentials, pretty and becoming attire for their women-folk. And, in most cases, it isn't stinginess or selfishness either; it is just that they don't understand. They reason, that because their wives live in the country and on a farm, their greatest needs are garments plain and serviceable; dainty, perishable gowns, and becoming hats are merely needless expense. What a mistake, when all the time the wives are hungry and heart-sore for a few of these!

There was a time when the farmer's wife bought her clothes with the egg and butter money, after the household groceries and the children's boots had been paid for. Nowadays, the cream is sent to the nearest creamery and hubby gets the cheques; and with the prices of dress materials more than doubled, the egg money can't be stretched to cover more than the kitchen aprons. I don't believe a woman can even be her best self when she is dismally conscious of shabby and ill-fitting clothes. She either drops her social life altogether or becomes self-conscious and unnatural when in company, instinctively seeking out-of-the-way corners, where her dingy garments will be least conspicuous.

After much pondering on the subject, I find the only practicable solution of this heart-burning clothes problem is a *definite personal allowance* for every farmer's wife. It is not a new idea, by any means, but the farmer-husbands have been slow in adopting it. Town and city women have proven it a success and why not the farm-women? Many sensitive women actually dread asking their husbands for money; they feel it a humiliation to have to coax for the dollars that they have earned over and over again. Then, the woman who is given money spasmodically never knows upon what she may depend, she cannot spend to the best advantage, the money she receives this month, when she is uncertain whether any will be forthcoming next month. What comfortable independence even a small personal allowance would seem to these women!

"Humph! Pay a woman for doing her own work! Well I wonder what the women will be wanting next." When this unjust remark fell from the lips of a man I know well, I conquered a wild desire to spring up fiercely and hurl at him all my pent-up hatred of his blindness, his obstinacy, his hateful stupidity. This man married the sweetest girl in our neighborhood, and, at the time, everyone said it was a good match. He was a tall, good-looking, young farmer with keen blue eyes, and a resolute jaw, a modern farmer too in nearly every respect. He knew all about soils and seeds and fertilizers, and the latest methods of agriculture and the best breeds of stock. His hundred and fifty acres of clayey-loam were the best cultivated and most productive in the township and naturally all the neighbors said, that the girl he married was a "lucky young thing." Her friends said he was "a mighty fortunate chap to get a peach like Betty, a first rate cook and housekeeper; and pretty, the prettiest girl in the countryside." Her rose-leaf complexion, her big, brown eyes and saucy smile had won him a score of rivals, and as he walked down the church-aisle, the day they were married, with Betty, dewy-eyed and lovely, leaning on his arm, he was a very proud and much envied young man.

But, as the years went by, people began to say that Betty was a "back-number," hardly a suitable wife for her up-to-date, progressive husband. Though no little ones came to claim her leisure hours, after two or three years of married life, she gradually dropped out of the simple social life of the community. Everyone thought it strange, for before her marriage, Betty had been the most indefatigable of church workers, a teacher in the Sunday School, an active member of the Ladies' Aid and Women's Institute, and a ring-leader in all the jolly doings of the younger set. Such a changed Betty—one could hardly believe that this silent, plain-looking little woman was the lovely, high-spirited girl of a few years before. From the very first, knowing Betty's husband as I did, I suspected the real reason for this change and I was right. Just another question of clothes.

As I said before, Betty's husband was a very modern farmer. The equipment of his house, barns and stables was perfect, up-to-the-minute in every detail. His magnificent, big, pure-bred Clydesdales were paying well and his herd of registered Holsteins promised to rival any prize-winners in the province. And

e was especially proud of his efficient ookkeeping system—he knew exactly here every dollar came from, and here every dollar went, and he carelly eliminated all that come under his olumn on "Non-Essentials." Betty ban to wish that she had married a odern husband instead of a modern rmer. If anyone had told him that s treatment of his wife was a relic of oneer days, when all the food and othing used by the family was grown n the farm, he would have been horried. Betty ripped, turned, dyed and ade-over all her trousseau gowns many mes, before she appealed to her husand. Then she showed him the deeted state of her wardrobe and, with urning cheeks, explained her need ully. She told him that what she anted was "a definite personal allowance, that she could depend upon for her very own." Then this up-to-date, progressive farmer calmly told his wife that his mother had never had a "personal allowance"—she had been content to let her husband handle the coin and had cheerfully accepted what was "given" her and he guessed since it had worked so well in his mother's case, it would answer very well for his wife. The next day he went to town and brought home with him a bolt of blue drill; this he triumphantly presented to Betty, dwelling on its long-wearing qualities and, adding that as they were "stay-at-home folk" she wouldn't need more fine clothes than what she already possessed. With this brilliant solution of the clothes problem she was supposed to be satisfied, cooking, cleaning and blue drill—not a very cheerful prospect for the years to come. But Betty belongs to a different generation from her mother-in-law and I believe that, sooner or later, she will find her own way out. But think of the disappointments, the heartaches and misunderstandings that might be saved, if Betty's husband and every other farmer-husband would just try, for a little while to see the "clothes question" and the "personal allowance question" from a woman's point of view.

WHOLESOME ARTICLES IN FARMERS'

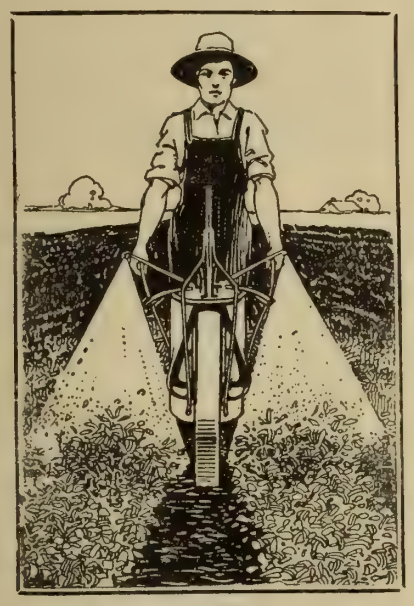
PICKERING, ONT.

I enjoy very much reading the good, wholesome articles published in the FARMERS' MAGAZINE *and much information is derived from them. Thanks very much for your information on sweet clover. I got one point from this I may experiment with, that is putting threshed sweet clover straw in silo after wetting. I was intending to use our straw for bedding, but now I think I will cut some fine and mix with ensilage. Stock seem rather fond of the straw and perhaps considerable nutriment still remains there.* F. H. WESTNEY.

Sore Eyes **Granulated Eyelids,** Eyes inflamed by exposure to Sun, Dust and Wind quickly relieved by Murine Eye Remedy. No Smarting, just Eye Comfort. At Your Druggist's 60c per Bottle. Murine Eye Salve in Tubes 25c. For Book of the Eye Free Write Murine Eye Remedy Company, Chicago

Your Spraying

Changed from a Big Job to a Small One



O-K Canadian 2-row Sprayer

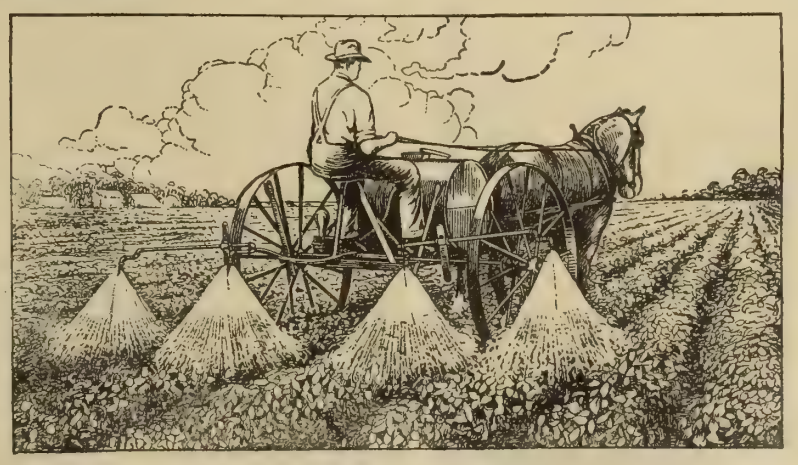
For small acreages it certainly is a surprising time-saver. It does the work as fast as you could run a wheelbarrow over your crop. It is used like a wheelbarrow and is just as easy to operate between rows. If need be a horse can be used for heavy ground. It sprays two rows at a time and there is no stopping for adjustments once it is set for width of rows. It throws out a fine plentiful mist that reaches every fold or surface on the plants, two rows at once. The discharge pipe can be detached for spraying trees, etc., and may be adjusted instantly for both height and width of rows. Tank holds 8 gallons. Write for full particulars.

PROPER spraying may save you the cost of acres of potatoes this year. Our sprayers cut down both work and time, leaving you not a reason in the world for taking a chance on bugs and blight. It turns this big job into a little one and leaves you extra time for other things and for spraying oftener. You can have time to spray **to prevent** bugs and early and late blight.

O-K Canadian 4-row Sprayer

Think of spraying an acre of potatoes in twenty minutes! It works like a charm, even on heaviest land, spraying efficiently four rows at a time. One horse pulls it easily, and the driver can watch every operation. There is easy access to all controls.

The 54-gallon tank is made of heavy galvanized iron, with reinforced heads; it is well riveted and soldered, so that there is no danger of leaks. The agitator inside keeps the liquid thoroughly mixed, giving no time for the ingredients to settle. The pump is all brass; desired pressure is easily regulated, or shut off at the end of the row. Now is the time to secure your machine, to protect your crops and get increased yields. We can ship right away.



O-K Canadian 4-row Sprayer

O-K SPRA

Here is without a doubt the surest, most convenient and most durable hand sprayer ever invented. It is equipped with the "efficiency" non-clog nozzle, which has a thimble-shaped strainer, and will keep in action longer without attention than any other type. Its shape prevents clogging.

Take a look at the curved lance. (See picture). It saves many a backache! It lets you get the nozzle under the leaves without bending your back.

The non-clog nozzle and curved lance enable you to use the O-K Spra for trees, shrubs, vines, bushes, or for disinfecting barns and hen coops, or for applying oils and washes to stock. Certainly no farmer could be persuaded to give up its use once he has had this all round handy and effective sprayer in use.

Time is Precious

If you leave off buying until your busy time you might put it off again—and lose far more than the cost of the machine. Write us for free literature with full descriptions and valuable information about bug poisons, fungicides, etc. Let us tell you how you can do your spraying in quick time and how to mix spraying materials.

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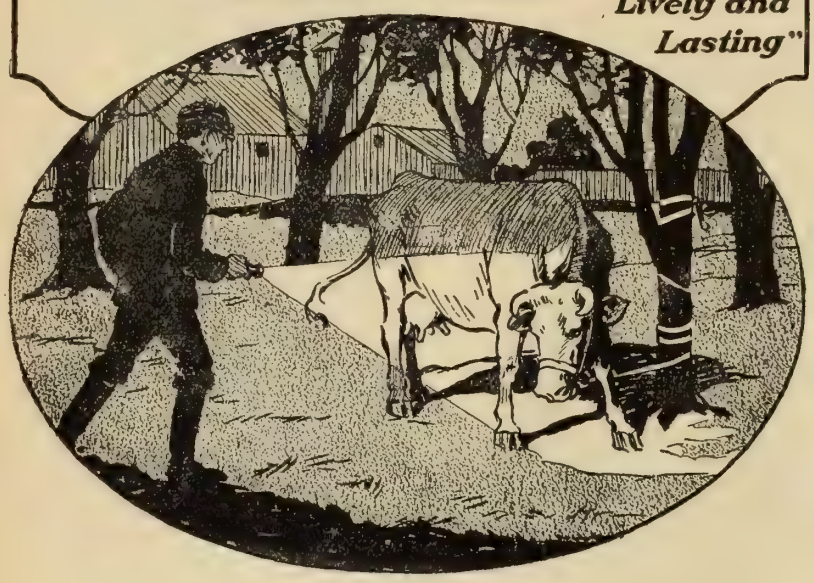


Greater Strength
and One-Quarter the Cost

FOR the heavy work rope traces are stronger and will wear longer. In rough work leather traces are stiff and get scraped; or they rip. Griffith Giant Rope Traces are flexible, can be slipped on in a jiffy and will not break. Remember, they are, by actual service tests, proven stronger than leather.

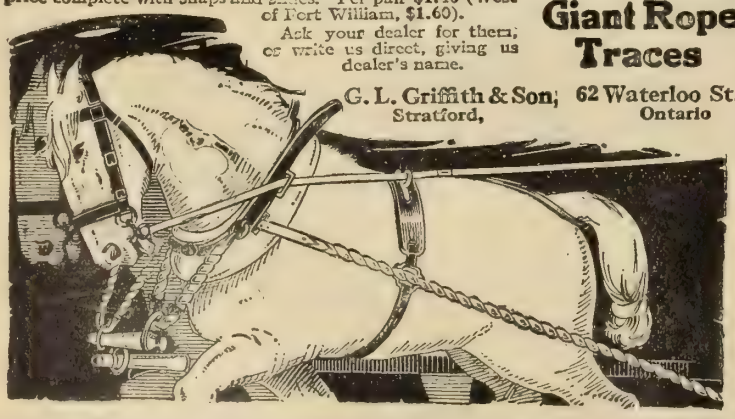
Giant Rope Traces are complete with malleable iron ends and electrically welded steel chains; either 7/8 inch for farming or 1 inch for lumbering. Price complete with 7/8 inch rope, set of four $6.00. (West of Fort William $6.50) 1 inch size $6.50. (West of Fort William $7.00.)

Griffith's Giant Yoke Ropes to replace leather pole-straps; price complete with snaps and slides. Per pair $1.40 (West of Fort William, $1.60).

Ask your dealer for them; or write us direct, giving us dealer's name.

Griffith
Giant Rope Traces

G. L. Griffith & Son; 62 Waterloo St.
Stratford, Ontario



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Live Games For Girls

More and more the girls in the country are learning to appreciate the enjoyment and importance of out-door games, tramps, and sports generally. The games described here are outlined by the Y. W. C. A. for "Canadian Girls in Training," and may be helpful to girls' clubs and classes of different kinds through the country.

Country girls have free access to fields, woods, water,—everything to promote the development of outdoor play.

Three Deep

The players stand in a circle, two deep, one behind the other. Outside the circle there is a runner and a chaser. The runner runs round the outside of the circle and goes in front of one pair, making that row "three deep." There cannot be three, so the last has to run in front of another pair (which cannot be the immediate pair to right or left), and again form three and so on. If the chaser can catch one of the players changing from one pair to another, the two change places and the one who is caught becomes the chaser.

Watch Your Step

This game may be played by one or more. Two cans with a fairly large surface are necessary. Each player places one can on the floor, places one foot on it and then, balancing herself, sets the other can at a distance that she can step. The player then lifts the can that is behind her and, while balancing on the other foot, places that can in front and goes on as before.

Automobile Chase

Have two or more teams, each consisting of two or more girls. Seat the players on chairs in a line. The distance may be greater for a few players than for many. The first player in each team rises on the signal and, turning to the right, runs round the end of the line and up the left side to place, thus making a complete circuit. Then the second player runs down the right side, up the left, and round the front, then back to place. So each player from first to last makes a complete circuit of the line. The team that finishes first wins the game.

Fox and the Goose

The players stand with joined hands in a circle. One player is inside the circle as goose and one, as fox, is outside. At the signal, the fox goes after the goose and those in the circle must let the goose go in and out as it likes, but must hinder the fox in the chase after the goose. When the goose is caught, fox and goose choose players to take their places and then join the circle and the game goes on as before.

I Say Stoop

The players form a circle, with one player in the centre. When the player says "I say stoop" all must stoop, and when she says "I say stand" all must stand. Those in the circle will do what the central player says, not what she does. For instance, sometimes the central player stands when she says "stoop" and stoops when she says "stand." In either case the players must not do what the central player does, but do what she says. If any player does not obey the commands she sits down in place. The winner is the last one standing up. The game is more interesting if the central player gives the commands quickly.

Everybody Jump

One player stands in the centre of a wide circle of players. At a signal, the central player, who has in her right hand a rope with a heavily knotted end, commences to swing round. Each player jumps over the rope as it swings round to her in turn. The player whose feet stops the rope as it swings round drops out. The last one to drop out is the winner.

Right Turn

This game requires at least ten girls. Place two or more girls in the front line, then have the other girls fill in behind, two or three deep. Two girls are left out—a runner and a chaser. All girls have eyes front and take hands. On the command "Right turn," each drops the other's hand, and, turning to the right, takes the hand of the girl on the right in the same line. After a little practice at this, so that the girls understand, place the pursuer at the front right hand corner while the one being chased stands at the back left land corner. On the command "Chase" the one who is being pursued runs along these lines. When the leader sees that the girl is likely to be caught, she gives the command "Right turn" and thus blocks the line for the pursuer. If the one pursued is a long time in being caught, the leader might help the pursuer by giving her open ways. When the pursuer catches the runner, she changes places with one of the girls in the lines. This girl is chased, after she gets into position, by the one who has just been caught.

Knock Ball

The players form a circle and stand close together. One player stands in the circle and, as the ball is passed, the player in the centre cries to knock it out of the hands of the person who happens to be passing it. If the ball is not picked up in time by the player in the centre when it falls, one of the players in the circle may pick it up and pass it on as before. If the central player gets the ball, the player out of whose hands it has been taken takes the place of the central player. This game must be played quickly and with a large ball. The ball must be passed one way.

THIS WASHER MUST PAY FOR ITSELF

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said: "All right, but pay me first, and I'll give you back your money if the horse isn't all right."

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may thnk about my Washing Machine as I thought about the horse, and about the man who owned it.

Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub features.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machine for a month, before they pay for them, just as I wanted to buy the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soap water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washerwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 50 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Please state whether you prefer a washer to operate by hand, engine, water or electric motor. Our "1900" line is very complete and cannot be fully described in a single booklet.

Better address me personally. C. E. Morris, "1900" Washer Co., 357 Yonge St., TORONTO.

WHOOPING COUGH

SPASMODIC CROUP ASTHMA COUGHS
BRONCHITIS CATARRH COLDS

24

Vapo-Cresolene

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A simple, safe and effective treatment avoiding drugs. Vaporized Cresolene stops the paroxysms of Whooping Cough and relieves Spasmodic Croup at once. It is a *boon* to sufferers from Asthma. The air carrying the antiseptic vapor, inhaled with every breath, makes breathing easy; soothes the sore throat and stops the cough, assuring restful nights. It is invaluable to mothers with young children.

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Leaks and Holes in Kitchen Utensils, Graniteware, Aluminum, Enamelledware, Tinware, etc., quickly repaired. Easy to use—just like putty. Hardens in two minutes. Each mend only 25c. 15 cts. package. At your dealer or pos paid by

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RECIPES

Baked Sliced Ham

CUT a slice of ham an inch and a half thick; cover with warm water, and place on the back of the range for an hour. Drain, cover with a mixture of two tablespoons of flour, two tablespoons of brown sugar, one-half teaspoon of mustard, and a dash of cayenne. Put a few small bits of the fat on top, and bake twenty-five minutes in a moderate oven. Place ham on platter, pour off fat in the pan, add one-fourth cup of tomato juice or weak vinegar; bring to boiling point, and pour around ham.

Beef Loaf

2 pounds shoulder trimmings chopped
¼ pound salt pork chopped
2 onions chopped
½ teaspoon pepper
½ teaspoon salt
3 common crackers rolled fine
1 cup milk

Mix in order given and bake in a deep pan about two hours in a slow oven. Serve hot with tomato sauce, or serve cold, sliced. One teaspoon of poultry seasoning may be added if desired.

Tomato Sauce

1½ cups tomatoes
½ cup hot water
1 slice onion
1 clove
1 teaspoon sugar
½ teaspoon salt
2 tablespoons bacon fat
4 tablespoons flour

Simmer tomatoes, water, and seasonings for fifteen minutes, and press through a sieve; thicken with bacon fat and flour blended together, and cook five minutes. If tomatoes are very acid, add a pinch of soda.

Fish Cakes

Press hot boiled potatoes through a ricer. (There should be two cups). Season with salt, pepper, two tablespoons butter and one egg beaten light. Beat the mixture thoroughly and add an equal quantity of cooked fish—salmon or any left over cooked fish. Moisten slightly with milk. Shape into round flat cakes, and cook in a frying pan with enough fat to brown nicely. Brown well on both sides.

Baked Bean Chowder

Boil one cupful of white beans till tender. Drain and turn into a casserole or baking-dish. Fry out the fat from two slices of bacon, diced, add to this one can of corn, salt and pepper and enough canned tomatoes to form a creamy mixture when added to the beans. Mix all well together, sprinkle cracker crumbs over the top and put in the oven for twenty-five minutes. Serve from the baking-dish. Half this quantity would be sufficient for a family of three or four.

Creamy Eggs on Toast

4 eggs
2-3 teaspoon salt
⅛ teaspoon pepper
2 cups hot milk
1 teaspoon butter
4 slices toast

Beat eggs slightly, add salt and pepper, and stir into the hot milk; cook slowly, preferably in a double boiler, stirring constantly until mixture is thick and creamy. Add butter, and serve on toast.

Tomato Jelly Salad

1 can tomatoes
½ onion
4 cloves
1 teaspoon salt
1 teaspoon sugar
⅛ teaspoon soda
Dash of cayenne
½ box gelatine
½ cup cold water

Cook tomatoes and seasonings for twenty minutes; soak gelatine in cold water for a few minutes; add to tomato, and stir until dissolved; press through a sieve, and fill individual molds, which have been garnished with a slice of hard-cooked eggs. Serve on lettuce with any dressing preferred. The pulp left in the bag will make excellent soup.

Mrs. Knox Says

Experts call Knox Gelatine the "4 to 1 gelatine" because each package makes 4 pints of jelly—or 4 times the quantity made by ordinary brands—and it is measured so that you can make the full quantity, or any portion desired.

As an example of a real delight I suggest this exquisite but easily made dessert of

KNOX SPARKLING GELATINE

Orange, Banana, or Apple Sponge

½ envelope Knox Sparkling Gelatine
¼ cup cold water
½ cup boiling water
1 cup orange, apple or banana pulp
1 cup sugar (½ cup if banana pulp is used)
2 tablespoonfuls lemon juice
Whites of two eggs. Few grains salt

Soak Gelatine in cold water five minutes and dissolve in boiling water. Add sugar, and when dissolved, add lemon juice. Strain, cool slightly and add fruit pulp. When mixture begins to stiffen, beat until light; then add whites of eggs beaten until stiff, and beat together thoroughly. Turn in mold, first dipped in cold water, and chill. May be served with a custard sauce made with the remaining egg yolks. If a Charlotte is desired, line mold with strips of stale cake.

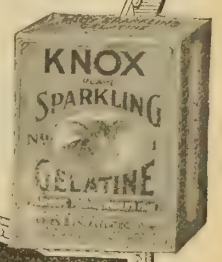
Including pure lemon flavor, for quick use

Plain, for general use, easily prepared

Note: This recipe only uses ¼ package of Gelatine and makes over 1 pint of sponge.

Write for the Knox Knowledge Books—"Dainty Desserts" and "Food Economy"—free, if you mention your grocer's name and address.

CHARLES B. KNOX GELATINE CO., Inc.
Dept. H., 180 St. Paul St., W. Montreal, Que.



High Efficiency in Separators

The new and up-to-date improvements on the Simplex Separator brings it to a point of such high efficiency and real merit that it is unequalled in points of superiority.

Simplex Cream Separator

Improvements:

The Bowl.

The bowl cover and shield is now made in one solid piece which is more convenient in handling and cleaning.

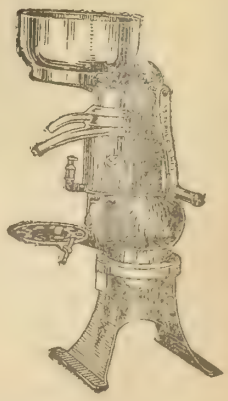
There is also a wider range for adjustment of cream density on the new bowl.

The Frame.

A great convenience and a necessary one is found on the "Simplex" Frame. The body of the Separator is held on extra heavy hinges with a self-closing spring. This allows ready access for cleaning and oiling. This ready access to these parts is essential on any separator, but the "Simplex" Separator is the only one claiming this advantage.

The Bearings.

Very high grade annular ball-bearings not known to be used on any other separator gives the "Simplex" Separator the record of being the easiest running separator on the market.



Write to us now for pamphlets which give full information on the Simplex Separator.

D. Derbyshire Co., Limited, Brockville, Ont.

Standard Stock Feed For Sale

DURING the war, for the purpose of assisting the farmers, the Department of Agriculture purchased a considerable amount of Standard Stock Feed (Recleaned Elevator Screenings). A large quantity of this valuable feed for hogs, cattle and sheep has been distributed and has given general satisfaction. Owing to the return of peace, and the approach of normal market conditions, the Department has decided to place at the disposal of the farmers its remaining stock, now in storage at Fort William. This is being offered in both the ***ground*** and ***unground*** form, at the following prices:

$25 PER TON
IN BULK UNGROUND
F.O.B. Fort William

We believe that the feed is excellent value at these prices, and that it will pay stock feeders at different points throughout the Dominion to consider the purchase of a car lot or more.

$32 PER TON
GROUND
Packed in 100-lb. Bags
F.O.B. Fort William

What is Standard Stock Feed?

It is known to farmers as Recleaned screenings, or Grade A Screenings or Buckwheat Screenings. "We found," writes a Carleton County user, "that our live stock took to the screenings quite readily; our experience with it was eminently satisfactory." Many other stockmen have give ι expression to similar opinions.

The Analysis of this feed is as follows:—

Protein	14%
Fat	5%
Fibre	8%

Note—Standard Stock Feed contains a higher percentage of protein and fat than either wheat or domestic buckwheat.

Standard Stock Feed has been tested in feeding trials at the Brandon, Lacombe, Ottawa, Cap Rouge and Lennoxville Experimental Farms. For finishing pigs, it has been found fully equal to barley. It can be used for all classes of stock with very economical results.

Comments on Feeding Value

Standard Stock Feed is an excellent ration for swine, a high feed for dairy cattle, and for fattening lambs has proven very valuable. It has also given very satisfactory results with fattening steers, .ed with or without other meals and grains. For poultry it has been found excellent and may be fed either whole or ground in hoppers.

Prospective purchasers must not be misguided by the appearance of Standard Stock Feed either whole or ground. The unground product is seen to contain a quantity of wild buckwheat. This feed has, however, a feeding value almost equal to cultivated variety. In the ground form the meal is somewhat dark in appearance, due entirely to the presence of the wild buckwheat. However, the feed is quite palatable and is readily relished by all classes of live stock. Experiments have shown Standard Stock Feed to possess a value equal to that of good meal mixtures of much greater cost.

STATE CLEARLY

Purchasers should state clearly in their orders whether "ground" or "unground" screenings are required.

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Write for particulars.

TERMS Sight Draft with Bill of Lading attached, payable on arrival of car. Orders should be sent direct to the Feed Division, Live Stock Branch, Ottawa. Feed may be purchased in straight car lots only, in bulk **unground** (25 tons to car); in bags **ground** (25 tons to car). Get your neighbours to co-operate with you and take advantage of this opportunity.

All orders will be filled strictly in the order they are received, and as the demand is likely to be quite heavy, orders should be placed at once to insure quick shipment.

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Freight rates per 100 lbs. ground or unground from Fort William to several representative points are given in order that you may get some idea of the cost delivered at your station.

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Live Stock Branch (Feed Division)

The Dominion of Canada Department of Agriculture

OTTAWA, CANADA

560

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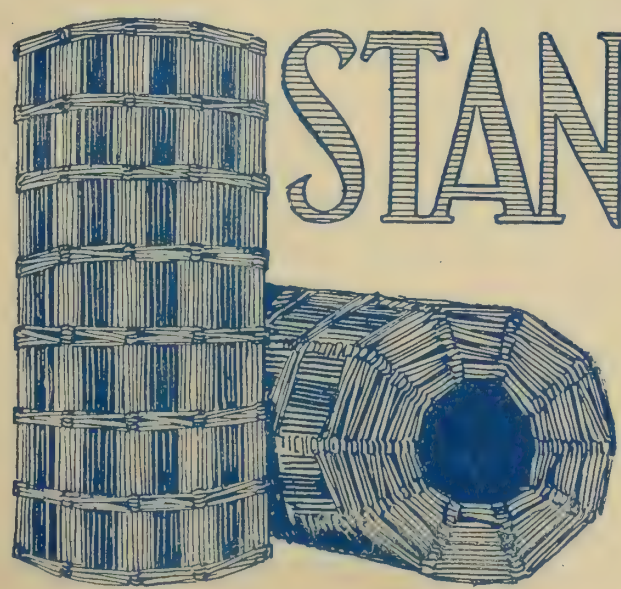

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FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto.

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VOL. XII, No. 8 APRIL 15, 1919 $1.50 Per Year 10 Cents Per Copy

12 h.p. on the Draw-bar

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24 h.p. on Belt Work

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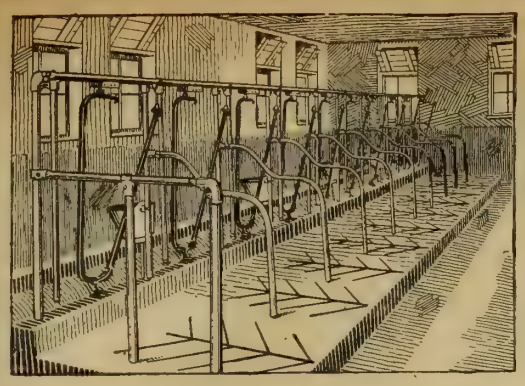
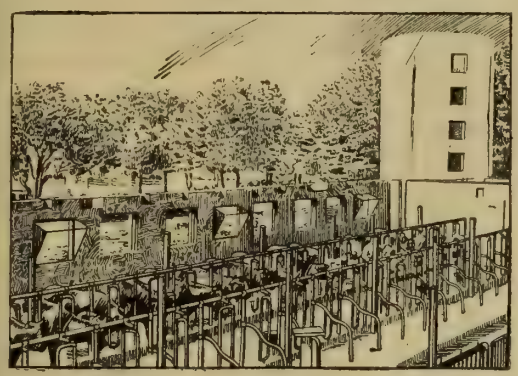


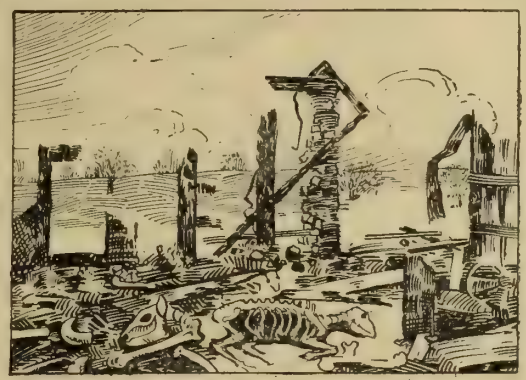
BT Sanitary Steel Stalls permit the sunlight to flood the stable freely. Sunlight kills disease germs. The steel stalls harbour no germs or vermin. They do not soak up liquid manure. Note the fine appearance of the stable.

Here is a poorly lighted, unsanitary barn of the old type where disease germs thrive. Tuberculosis germs thrive in dark, dirty barns. Liquid manure soaks into the old wood stalls and is one of the chief causes of tuberculosis.

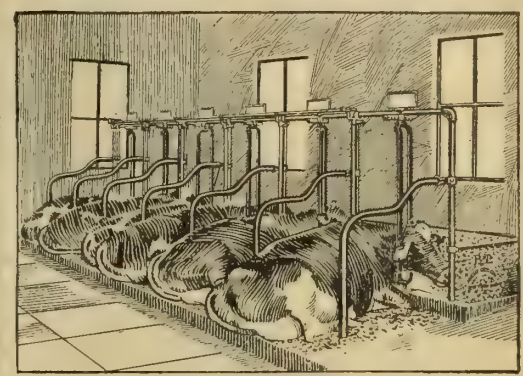
These cows are tied in the steel stalls. Note that they are lined up evenly with the gutter so that no manure falls on the cattle stand and none falls on the walks. This keeps the cows clean and saves much work in stable cleaning.



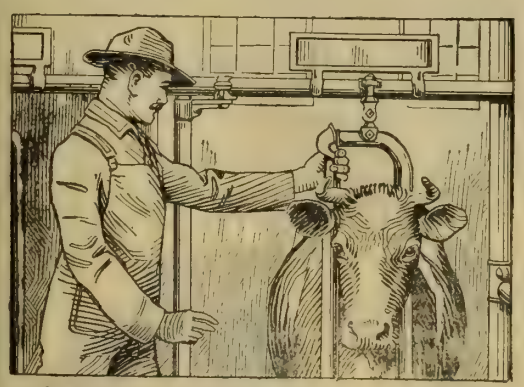
Here is the barn of Col. Robertson, Williamstown, Ont. It caught fire and burned to the ground, yet the steel stalls were uninjured, and after the fire the cows were tied up in their places and a photo taken. A few cents made the stalls as good as new. BT Stalls are fireproof.



Here is what happens to the old style barn when it catches fire. The old wood stalls burn up like matchwood and everything is a loss. Not only that, but it is also difficult to get the cows out because they tug and jerk at their chains, making it impossible to undo the chains.

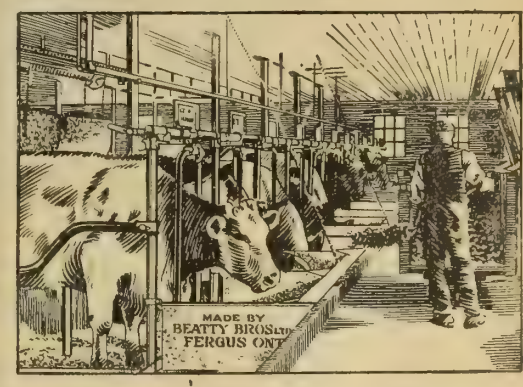


Every cow has her own manger in this stable and cannot steal from her neighbor. The fast eating cow cannot gormandize at the expense of the slow eater. With the truck the cows can be fed in a very few minutes. The time work saved by up-to-date stable equipment pays back much of the cost.



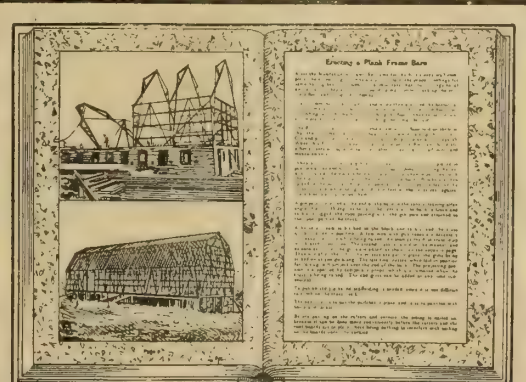
The BT Steel Stanchion is easy to open. This saves work and annoyance every day. You can open this stanchion with one hand. A whole row can be untied in less time than it takes to undo a single chain tie. This is very important in case of fire.

The old-fashioned chain tie is hard to open. This wastes time every day. It is a serious matter in case of fire, for the cow becomes terrified, tugs back and it is impossible to release her. In addition a chain tie is very uncomfortable for the cow.



Cows when tied in steel stalls have absolute comfort. They can lie down on either side, turn their heads freely and card themselves back to their flanks. Cow comfort increases milk production. Cows will give 10% more milk when tied in these stalls.

Here are the BT Sanitary Steel Calf Pens. A whole row of the calf stanchions can be opened or closed at once. Each calf has a separate pail and cannot get another's portion. The steel pens are sanitary and durable.



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FARMERS' MAGAZINE

Canada's National Farm Magazine

JOSEPH McGOEY, *Manager* F. M. CHAPMAN, *Managing Editor*
ETHEL M. CHAPMAN, *Associate Editor*

An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.—Lloyd George.

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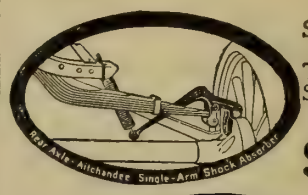

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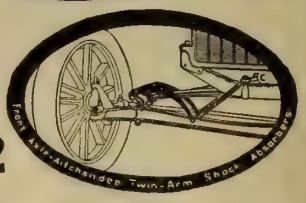

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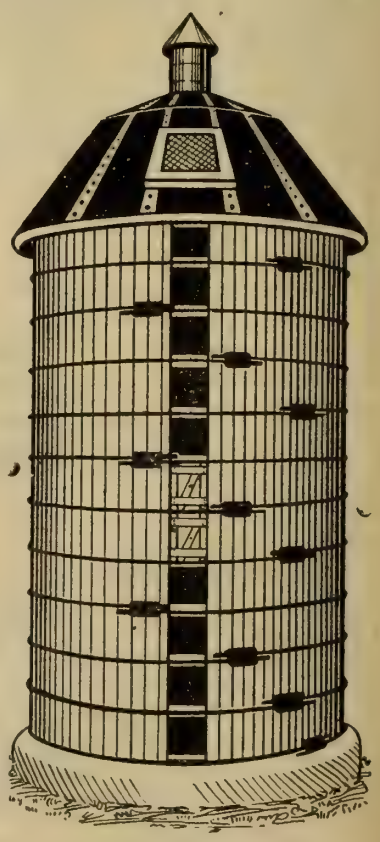

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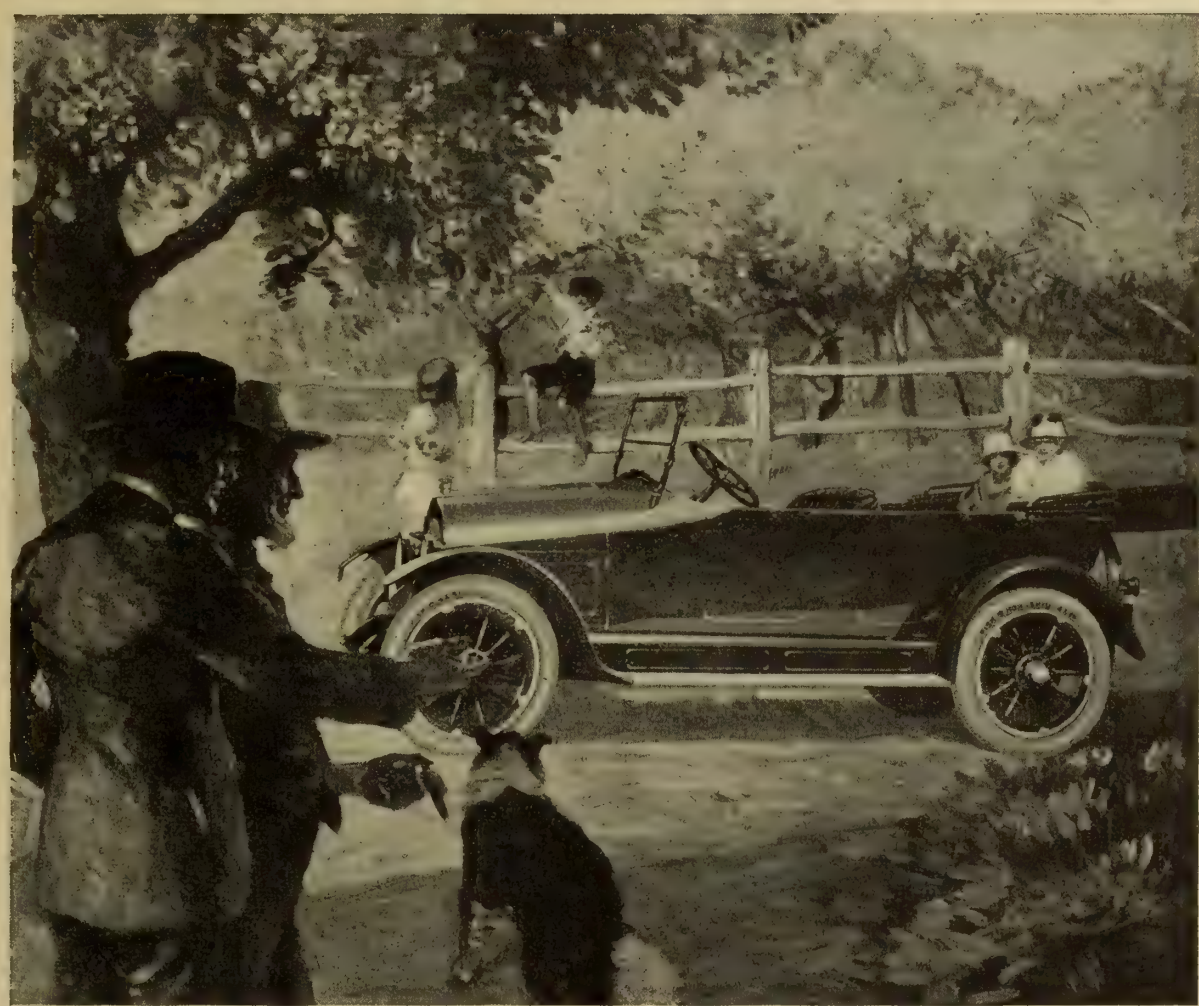

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FARMERS' BUSINESS

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Investments & Insurance For the Farmer

The Investment Situation

By J. W. TYSON, Editor *Financial Post*

THE fact that Victory Bonds have so well justified the confidence of investors is arousing increasing interest in security investments amongst farmers. The Victory Loan campaigns were to a great many people an education, and the rise in the price has served to bring home the point of the lesson. Following are some of the recent quotations on Government securities:

Victory Loan—1937	106¼
Victory Loan—1933	105
Victory Loan—1927	103⅛
War Loan—1931	99⅜
War Loan—1925	99½

There have been several factors at work which have been responsible for this advance in the market for Government bonds and these have also been reflected in other phases of the investment situation, affecting, as they do, bonds and stocks in general.

In the first place there has been the signing of the armistice, signifying victory for the Allied cause. This had the effect of removing any feeling of uncertainty regarding security behind the Government's promises, and, at the same time, indicated the beginning of the end so far as the heavy expenses of the war were concerned.

Also the ending of active warfare meant the conclusion of orders for munitions and other war supplies and the commencement of the general readjustment to a peace basis. This had the effect of unsettling industrial conditions, particularly as regards labor and raw materials, and there has been a feeling of hesitation displayed towards industrial securities which has largely offset the forward movement of the "peace" stocks. There has been some improvement in the market for mines, and bank stocks have benefited from the influences of peace, but for the most part investors have been showing a tendency to place their funds in gilt-edge propositions and the Dominion issues have been the favorites.

There has been the apprehension of the investor regarding taxation of incomes, which has enhanced in the eyes of both holders and buyers the value of the tax exempt bonds and at the same time has increased hesitancy with regard to industrial and other securities.

While, however, the fear of Sir Thomas White's budget has been an influence in putting tax-free bonds in the front rank of investment popularity, provincial and municipal securities have been feeling to the full extent the attractiveness of gilt-edge investments with the public, thus indicating the feeling of uncertainty with regard to the industrial and general business situation in which labor unrest is the dominating factor. Likewise the bank stocks have been in demand as they are evidently regarded as being amongst those least susceptible to labor conditions. Industrial bonds have also received some attention but not to the extent it is generally considered warranted by the strong reserve position which many of the leading companies have established. Likewise it is argued that the better preferred stocks are also in a cheap position, technically speaking, but it is doubtful if there will be any distinct forward movement until such time as the outlook becomes more settled.

For the time being the markets are in rather an inert condition. The readjustment process in investment values seems to have reached a stage where it requires some definite trend of business to establish a basis for the present by indicating the future. Even the bond market—although war issues are very popular and strong—is inclined to dullness as compared with the activity which prevailed for some months. At the same time there is no indication of any reaction in values. So far as industrial issues are concerned, and the commons in particular, the market is very narrow and any small effort to either buy or sell is likely to uncover a soft spot. At the same time the market appears to be in a good position, with holders generally content to bide their time.

A general survey of the business situation, particularly in relation to manufacturing, provides explanation of the prevailing sentiment towards industrial issues. The period of readjustment is at hand but the process is being attended with serious difficulties. Labor is the chief problem. Workers are demanding maintained and even increased wages in the face of contracting markets for many commodities and the manufacturer is faced with big problems. The demands of the workers are backed by a policy which tends towards Bolshevism and, therefore, constitutes a menace the seriousness of which cannot be defined—social unrest is in evidence but it is an unknown quantity and, therefore, difficult to contend with. Commodity prices, in which labor in the last analysis is the dominating factor, are very much unsettled and until they come to something like a stable level buyers are not likely to change their present attitude of watchful waiting.

Under all the circumstances there are undoubtedly many opportunities for the speculator who wants to take a chance and who can pick the "good ones," but the average investor will lean to the safe side for some time and will, therefore, look for gilt-edge securities even though the yield may be relatively smaller; this will particularly be the case with the farmer who is not in a position to keep closely in touch with the stock markets or follow those complex influences which affect investment prices.

INSURANCE COMPANIES LOAN TO FARMERS

By W. A. Craick

THE treasurer of one of Canada's largest life insurance companies tells me that there is at present a very appreciable increase in the number of applications for mortgage loans on the part of the farmers of Western Canada. He anticipates a decided expansion in this direction during the year, as the soldiers get back, post-war improvements are undertaken and the cultivation of the land extends. In fact, he fears that if the present demand keeps up he will be unable to furnish sufficient funds to supply all appeals.

His remarks serve to emphasize the fact that among the important agencies which are helping to promote agricultural development in this country are the life insurance companies. The particular institution which he represents has over twenty millions of money out on loan, the bulk of it in farm mortgages. And other institutions also have large sums invested in this way.

This is a service being rendered by the life insurance companies of Canada that is not very often remembered by the people who buy life insurance. To them, the insurance feature is the main thing. As a matter of fact the money which they are paying annually by way of premiums to keep their policies alive is being used, in part at least, to assist the

Continued on page 63

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No. 6400 6 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 9. Per Rod..... **43c.**

No. 7400 7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod..... **49c.**

No. 7480 7 line wires, 48 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6½, 7½, 9, 10, 10. Per Rod..... **51c.**

No. 8420 8 line wires, 42 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6 , 6, 6, 6, 6, 6, 6. Per Rod..... **56c.**

No. 842 8 line wires, 42 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod..... **61c.**

No. 8470 8 line wires, 47 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **58c.**

No. 847 8 line wires, 47 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **63c.**

No. 935 9 line wires, 35 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 5, 5, 6, 6. Per Rod..... **70c.**

No. 948 9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6, 6. Per Rod..... **69c.**

No. 9481 9 line wires, 48 inches high, uprights 13 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **77c.**

No. 9500 9 line wires, 50 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **63c.**

No. 950 9 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **69c.**

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No. 7261 Same as Style No. 726, but with uprights 8 inches apart. Per Rod..... **40c.**

No. 7266 Same as Style No. 726, but with uprights 6 inches apart. Per Rod..... **45c.**

No. 834 8 line wires, 34 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4, 5, 6½, 8. Per Rod..... **42c.**

No. 936 9 line wires, 36 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized Spacing 3, 3½, 4, 4½, 4½, 5, 5½, 6. Per Rod..... **43c.**

No. 949 9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **48c.**

No. 1150 11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod..... **54c.**

No. 1448 14 line wires, 48 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 5½, 6. Per Rod..... **64c.**

"IDEAL" Poultry Fence

Top and bottom wires No. 9, all others No. 13. Carried in stock in 10 and 20-rod rolls.

No. 1848 18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod..... **80c.**

No. 2060 20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5, 6, 6. Per Rod..... **88c.**

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Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

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3	42	3.30
3	48	3.40
3½	36	3.30
3½	42	3.40
3½	48	3.75
4	48	4.00
10	36	6.75
10	42	7.00
10	48	7.25
12	42	7.25
12	48	7.75
13	48	8.00
14	48	8.25
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Improved "IDEAL" Stock Gates

Wire filling No. 9 throughout, same as Heavy "IDEAL" Fence. No fence filling used. Each wire put in by hand.

Carried in stock in following sizes only:

12 feet long, 51 inches high, each..... $7.25
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Fence Supplies, Brace Wire and Barb Wire

Ideal Steel Posts, 1½ x 1½ x 7' long..... $0.55
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Barb Wire

4-pt. 4" Galv. Cabled, per 100 lbs..... $6.00
4-pt. 6" Galv. Cabled, per 80-rod spool..... 5.10
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Daily Results

"Problems that formerly worried me are now so easy as to seem almost unreal, since I gained power of personality through CONSCIOUS EVOLUTION."

"CONSCIOUS EVOLUTION has made me conscious of new energy, of a better power of mind. I seem tireless. I seek action, instead of stagnation, as formerly."

"I am filled with a new zeal."

"I would not take fifty thousand dollars for the power which in six weeks CONSCIOUS EVOLUTION has given me."

"I am happy to say that I received your instructions, and that in spite of travelling a good deal, my health is remarkable at ninety years of age."

"I am certain I am gaining in every way, for I feel as full of 'fight,' and energy, as a wild cat."

"I owe my rise from the position of a country insurance agent to virtual head of one of the largest insurance companies of the world entirely to the power of personality CONSCIOUS EVOLUTION has given me."

"My weak will and personality for years made it possible for my business partners to rob me of my proper share of profits. CONSCIOUS EVOLUTION gave me courage, self-reliance and power of personality, and I made my partners pay me $160,000, out of which they had bulldozed me during my feeble and powerless days."

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"I note from your system a marked strengthening of my will power and concentration. I feel the interest of life much more keenly."

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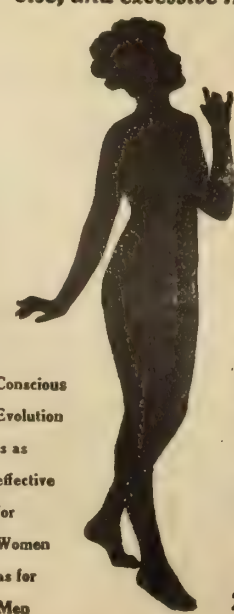

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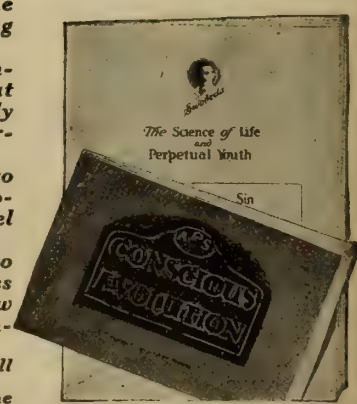

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FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. APRIL 15, 1919 No. 8

Livestock is Aviating Over America

By JAMES E. POOLE
Leading Market Expert

GRASS is rising early this season, winter conditions were favorable both for the cattle and sheep industries and an early run of beef and mutton from pastures west of the Missouri River is scheduled. This will be a boon to producer, packer and consumer, *But plenitude of beef is impossible.* The lamb crop is heavy, both east and west of the Missouri River, but everywhere cattle shortage is pronounced, the whole country being long on grass. Such *skirmishing as grazers have been forced to undertake in an effort to tenant grass is without precedent,* the drain of the war period being in evidence. Had the European war been dragged out another year, beef famine of the acute variety would have developed.

Stock cattle are worth anywhere from $50 to $100 per head in Texas, much of the stuff available having been stunted by the long drouth. Such cattle having lost their stretching qualities never do well in the maturing, hence grazers are reluctant to put much money into them, especially in view of the uncertainty surrounding the future of the fat cattle market. It is a case of not enough to go round, however, putting the breeder in an impregnable position. Grazing areas that were bare all last year now have feed in abundance, hence the survivors of herds that went through the period of vicissitude are not seeking a market. If they can be disposed of at a profit, well and good, otherwise the owner is ready to take a chance on carrying them.

Despite discontinuance of Government beef buying, the cattle market has given a good account of itself during March and April, discrediting prediction of a 25 per cent. depreciation when the inevitable happened. Less than 200,000 cattle are now reaching the markets of the United States weekly under present conditions, the major part of which is stockers and *near-beef.* Aged cattle have all but disappeared, a load of 1,400-lb. bullocks is a novelty and packers are making such keen competition on 800 to 1,000 lb. steers, that a year ago went to the country without opposition, that each day's slaughter is a draft on future supply. Iowa, Illinois and South Dakota feeders have cleaned up 30 to 60 days in advance of the usual time, insuring shortage during the May to September period.

A livestock business plant that pays good dividends at any time

What Will Happen in September?

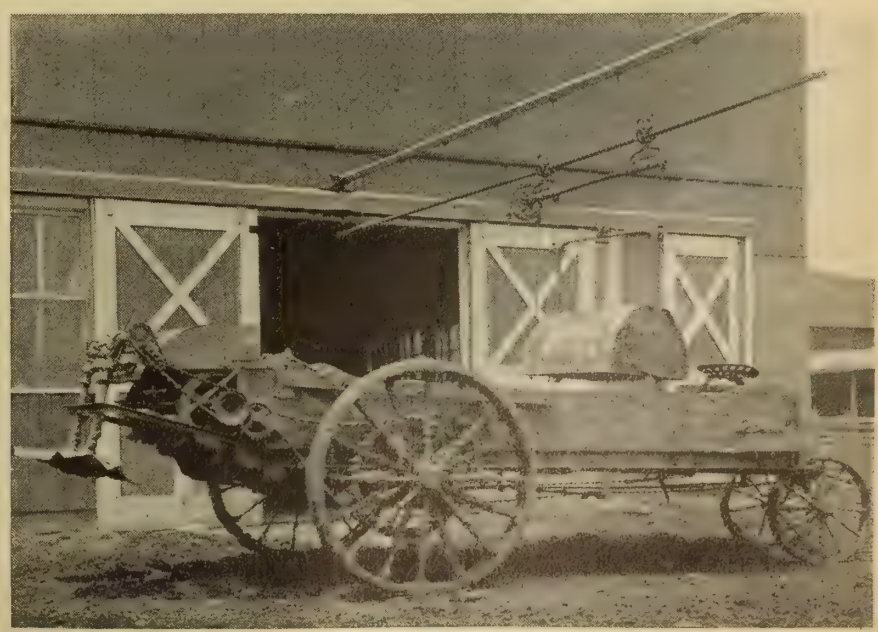
Interest naturally centres on what is likely to happen at the market during the last half of the year, elimination of export demand being a certainty. Expectation of continuance of war prices is illogical, consumers are balking at retail cost and a 20 per cent. increase in supply would insure lower levels. Under present conditions weekly supply is insufficient to satisfy domestic consumption, and but for frozen stocks, which packers are rapidly reducing to the zero point, it is doubtful if current values will be possible. *Well-posted traders expect the summer and fall crop of grass beef to sell about $2 per cwt. lower than in* 1918. No matter what the run may develop in a numerical sense, weight will be lacking and tonnage counts. Last year drouth forced Montana, the Dakotas and the entire region west of the Continental divide to liquidate, and while contention that it is a big country is indisputable so also is the fact that cattle have gone. Last year range cows by the hundred thousand went to the shambles; this year the West is in the market for female stock, the problem of recuperating breeding herds being a serious one. Texas has not had a calf crop exceeding 50 per cent. in three years and at the normal rate of increase, even under favorable climatic conditions cannot restore beef production to a 100 per cent. basis within five years. Even in the territory south of the Ohio and east of the Mississippi, which has been getting into the cattle business recently, it is doubtful if material increase is possible. Sections of Virginia, Kentucky and Tennessee, that five years ago were able to contribute heavily to stock cattle supply, are now trying to buy. New York, Maryland and Virginia have filed more orders for stock cattle at Chicago recently than can be filled and Wisconsin grazers, who up to last year were able to replenish grass at St. Paul, have paid as high as $15.85 per cwt. for 1,000-lb. steers at Chicago. Such operators as D. B. Zimmerman, of South Dakota, who formerly kept ample reserve stocks in Texas, have been forced to invade Western Canada. The cornbelt is bare $16 to $16.25 having been paid at Missouri River markets for fleshy steers for summer feeding lately, while Kansas pasture men who until two years ago experienced no difficulty in buying all the 3 and 4-year-old steers they needed in the Texas panhandle are competing with killers at Kansas City. Evidently the shortage forecasters are making good.

A Wide Range in Cattle Price

Cattle are now selling at the widest range in market history, killers taking light common steers as low as $8

Continued on page 24

A piggery that gets results. $21 per cwt. was paid for live hogs last week



The link between livestock and fertile soils. Top dressing of growing crops gets results

Safeguarding the Health of the Child in School

Charts From Dr. Thos. D. Wood, Chairman Committee on Health Problems in Education, Columbia University

THE protection of the health of school children in the country through medical inspection and school clinics, has depended and will depend to a great extent upon the interest and initiative of the women in the community. In addition to this campaign, or to help it along—and there seems to be a promise that it will be carried on more vigorously than ever now that the women's hands are relieved of Red Cross work—there are certain things which every mother should know regarding the protection of the growing body of the school-age child. A thing even as trivial as a garter may have a serious effect. It isn't too soon to be warned against the tight, dragging variety now in vogue. They tug up the stockings at one end, tug down the shoulders at the other, by means of the tight shoulder straps which are attached to the waists supporting the garters. The little plastic body is pulled out of its free, erect carriage, and a tendency to round shoulders or one-sidedness may be greatly increased. There are good shoulder straps which hold the garters without the intervention of the waist, straps so made as to draw the shoulders back into a correct posture. These are best of all, for the danger of the round garter to circulation is well known.

Apropos of soft bones—do you know that lateral curves of the spine are found in perhaps as many as thirty out of every one hundred school children? And by that thirty, specialists mean not those with the slightest deviation from the median line, either, but curvatures serious enough to need treatment. It is safe to say that half the people in the world having what physicians know as curvature would be shocked to learn it. They warn their dressmakers to allow for a high hip or sloping shoulder. For women are the majority of the victims. They do not know that the uneven hip or shoulder is likely enough the result of a lateral curvature of the spine.

Scoliosis is the technical name for this one-sidedness. It develops during the years of soft bones. The child perhaps forms a habit of sleeping always on the same side. She forms a habit of standing with one hip raised, often resting an armful of school books on the left hip and letting it sink. She may wear the incorrect garters mentioned above. She may curl up one-sidedly when she sits for long periods. Habit, habit. Always day after day, the soft bones are forced into a crooked position, and some day she steps forth, a grown woman, the bones hardened and fixed for a lifetime, with this ugly curve established. It is like the molding of cold metal that has been poured when molten.

Nobody but a watchful mother has much chance of averting this deformity. She must break up every one of these habits of bad posture, insisting that the child shall sit, stand, walk, straight. If the first sign of a curve developed, let the child learn to sleep lying on the concave side of the trunk. The mattress should be a firm one. If the school does not give sufficient gymnastic exercise, see that she (or he—for boys may develop the trouble) gets a good amount of outdoor play. There are special corrective exercises for such deformities. Talk this matter over with a physician. Not only is a curve like this an annoying disfigurement to endure, but very serious results may follow, from the pressure on certain organs.

Flat foot, the falling of the arch, has been called by Dr. Judson, the orthopedic surgeon, "an ailment for which there is really no good excuse." Teach your child a correct posture; give him shoes that are large enough, heels that are low enough, leave his ankles free enough—no tight lacing—choose soles that are flexible enough, and he's not likely to be troubled.

When mothers have a clearer understanding of the fundamentals of right living, such as diet, ventilation, baths and the like, we shall have a generation which is more resistant in general to the inroads of disease, less susceptible to contagious diseases, to degenerative diseases such as heart and kidney trouble, to epidemics, to nervous breakdown, to tuberculosis. In addition to this, we must have an understanding of special forms of hygiene—of the eye, the ear, the throat, and so on, if we would radically reduce the list of those handicapped by deafness, myopia, and all kindred affections.

A MEMBER of the Harvard faculty made the statement that nothing smaller than your elbow should ever be inserted in a baby's ear. That is an excellent first lesson in the care of the ear. The human ear bears a deal of wholesome neglect—that is, inside. Nature provides wax for the protective purposes of her own. But the keenest watchfulness should be ready to note any sign of deafness. This same specialist says that the mother is often the last person to recognize this. Over and over she insists that her child is inattentive. But no perfectly normal child is inattentive, he states. The child is keenly alert provided all his faculties are unhindered. Educators have come to recognize this fact of late years, and it has caused a deal of upsetting in the schools. "Stupid" and "inattentive" children have been found to be suffering from adenoids or myopia, so that they heard only part of the teacher's instructions, or never saw clearly what was on the blackboard.

The great proportion of adult deafness is caused by adenoids. These cases are usually incurable. If the

Continued on page 61

TEN GOLDEN RULES OF HEALTH FOR SCHOOL CHILDREN

I Play hard and fair—be loyal to your team mates and generous to your opponents

II Eat slowly. Do not eat between meals. Chew food thoroughly. Never drink water when there is food in the mouth. Drink water several times during the day.

III Brush your teeth at least once a day. Rinse your mouth out well with water after each meal

IV. Be sure your bowels move at least once each day.

V. Keep clean—body, clothes, and mind. Wash your hands always before eating. Take a warm bath with soap once or twice a week, a cool sponge (or shower) bath each morning before breakfast and rub your body to a glow with a rough towel.

VI Try to keep your companions, especially young children, away from those who have contagious diseases.

VII Use your handkerchief to cover a sneeze or cough and try to avoid coughing sneezing, or blowing your nose in front of others.

VIII Study hard—and in study, work or play do your best.

IX Sleep: Get as many hours in bed each night as this table indicates for your age. Keep windows in bedroom well open

Hours of Sleep for Different Ages

Age	Hours of Sleep
5 to 6	13
6 to 8	12
8 to 10	11½
10 to 12	11
12 to 14	10½
14 to 16	10
16 to 18	9½

X. Be cheerful, and do your best to keep your school and your home clean and attractive, and to make the world a better place to live in

TEN SANITARY COMMANDMENTS FOR RURAL SCHOOLS

In every school which may be considered passably sanitary the following conditions shall obtain

1. Heating by at least a properly jacketed stove. (No unjacketed stove to be allowed) Avoid overheating Temperature should never go above 68F There should be a thermometer in every schoolroom Ventilation by open windows when weather permits and by opening of windows at frequent intervals even in winter
2. Lighting from left side of room (or from left and rear) through window space at least one fifth of floor space in area
3. Cleanliness of school as good as in the home of a careful housekeeper
4. Furniture sanitary in kind and easily and frequently cleaned Seats and desks adjustable and hygienic in type
5. Drinking water from a pure source provided by a sanitary drinking fountain
6. Facilities for washing hands, and individual towels
7. Toilets and privies sanitary in type and in care (with no cesspools unless water tight) and no neglected privy boxes or vaults.
8. Flies and mosquitoes excluded by thorough screening of schoolhouse and toilets
9. Obscene and defacing marks absolutely absent from schoolhouse and privies
10. Playground of adequate size for every rural school

TEN ESSENTIALS FOR HEALTH CARE OF CHILDREN IN RURAL SCHOOLS

I. Daily health inspection by parent and teacher with the cooperation of school nurses and doctors.

II. General health examination including dental examination at least once a year.

III. Follow up health work with provision of medical, surgical, and dental care for correction of health defects, with service of school or district nurse, to make effective the health program in the school.

IV. Warm school lunches for all rural school children.

V. Sanitary and attractive school houses and surroundings

VI. Efficiently trained teachers who are qualified to do their full share in the care of health and welfare of the children.

VII. Practical health instruction of all pupils for the establishment of health habits and the extension of health conduct and care to the school, to the homes and to the community in general.

VIII. Special classes and schools for the physically and mentally defective

IX. Generous provision for wholesome play and recreation in school and community.

X. Organization and cooperation of interested people and societies to insure to all the children the essentials of health and general well-being

The SILO *in* WESTERN CANADA

By GEORGE K. MILLER

TO the average Eastern reader of FARMERS' MAGAZINE, the idea of silos in Western Canada may seem absurd. The prevailing opinion of many that our prairie climate is too cold for corn growing or the storing of corn as ensilage would suggest that an article on the above subject could be nothing more than an outline of a few attempts at handling the corn crop in the West. The facts are, however, that in Manitoba there are just over 100 silos in actual use, and some 30 odd each in Saskatchewan and Alberta. Corn growing is quite past the experimental stage, and the practical advantages of ensilage in the feeding programme of our best cattlemen is fully appreciated.

Looking for a moment at conditions existing in the West, it is natural to expect that the development and use of the silo on the average farm where cattle feeding is a feature will be very pronounced in the next few years. Unlike Ontario and the Eastern Provinces, the growing of alfalfa, red clover and roots has not become an important part of crop production in the West. We lack abundance of those crops that make up so completely the succulence and nutrition available to the Eastern cattle feeder. We have a long, severe winter that demands the careful housing and feeding of stock through almost six months of the year. These winter conditions, combined with a lack of succulent feeds, place the Western farmer at a great handicap in competition with cattle feeders of the East and South. It is this handicap and the determination of Western farmers to overcome difficulties that has brought the silo into such extensive use at this early stage of Western Canada's agricultural development.

Singularly enough, Manitoba has in use almost every common type of silo, from the wood stave to the concrete styles above ground, and the underground or pit silo. The fact that silos exist in all types and styles in Manitoba is evidence that feeders are not unanimous as to the one best kind for our peculiar conditions. This condition is largely true in Saskatchewan and Alberta, but in Alberta the winter climatic conditions are even more moderate than in Ontario, and the question of construction to prevent freezing is not such an important one. The ten years' experience with silos of some of our leading stockmen and the experience obtained in their use at all the experimental farms and demonstration farms in the West, have meant much to those who are beginning with the silo now.

In point of numbers, the wood stave silo is the most commonly used. This type has the advantage of being cheap at first cost, easily erected and is portable. Its disadvantages are its liability to heavy freezing and blowing down in summer, when erected outside the barn in a climate as windy as that of the prairies. Of the concrete types, the concrete stave is possibly the most popular, and these are now going up in large numbers. If exposed to the weather this type will freeze seriously, but if tightly roofed in and the doors kept closed in winter, no great loss is experienced from freezing. If one were forced to recommend the particular type of silo best suited to Western conditions of the above ground types, it would possibly be the concrete stave, built inside the barn or protected in some way from the frost. In this connection it is interesting to note what some farmers have done to protect silos from frost. On the farm of J. H. McGregor, Reston, Manitoba, an outer wall was made about four feet from the outside of the silo, by setting long poles in the ground and tacking woven wire on the inside of these poles. The intervening four-foot space was then filled with straw. The result was that no frosting occurred in the silage.

Farm buildings and Holstein herd at Glenlea Stock Farm, Manitoba, owned by W. G. Cummins. Note the two silos are of the concrete base stave type.

Possibly no one practical farmer in the West has had more extensive experience with silos and silage than J. D. McGregor, the famous cattle feeder, at Brandon, Manitoba. After ten or twelve years' testing of different silos, Mr. McGregor has practically decided that the underground or pit silo is the ideal one for Western conditions. He recommends it particularly in locations where the ground is high and dry, and of a clay composition, also where farmers are short of money. After the pit is dug in circular form, the wall is plastered, making it impervious to water. Very little power is required in filling, and a hoist is made for removing the silage from the pit. There is absolutely no loss from frost in this type of silo. Mr. McGregor advises strongly against the reinforced concrete type built on the farms. He has found difficulty in getting such a silo to withstand all the acid juices and weight that come against the walls. This is possibly due to the difficulty in securing good sharp sand and clean gravel for building, and the presence of so much alkaline water on the prairies. Numerous instances could be cited where solid concrete silos have fallen.

In the East, corn is the only material considered for silage, but Western silo users have learned not to depend too strongly on one crop for this purpose. There are districts in the West where high altitudes, cold soil, early fall or late spring frosts, etc., make corn growing a speculative proposition. In such districts it is common to find that the advantages of silage in some form are fully appreciated. Such substitutes for corn as oats and barley, or both, cut green and stored in the silo, give splendid results. In fact, it is seldom that any Western silo is entirely filled with corn silage. Such crops as green oats or peas and oats are more certain than corn and can be grown with less labor. If properly tramped, and not put in when dry, such silage comes out green and succulent throughout the winter. The district of Lacombe, for instance, is one where corn growing may never become a great succees. The soil is heavy and the rainfall great. The altitude is high and summer nights very cool. Yet on the experimental station at Lacombe G. H. Hutton, B.S.A., the late superintendent, has conducted the most valuable experiments in support of the use of silage made from other crops than

Continued on page 16

This silo is located in Northern Alberta, near Camrose, on the Rosedale Ranch, where dairying and beef cattle are specialties

Farmer Putnam on Silos

A SILO is a hole, entirely surrounded by a wall, fur storin' cow feed. Sometimes the hole is in the ground; sometimes it is up in the air. To build a silo, first select a nice spot fur the hole, then build a wall outside of the hole if you build up, or inside of the hole if you want a pit silo. Either kind is good, but you got to go about it different. If you can't put up a silo, put one down, but don't put it off.

All kinds of material is good for silo buildin' exceptin' hot air. Good ones is made outen cement, concrete, cement staves, or slabs, holler tile, brick, stone, wooden staves, steel, or two-by-fours. We has 2,000 silos in Colorado made of them above materials and about 20,000 outen hot air. Most of the farmers has got the spot for the hole picked out, but they hain't never begun to commence to build yet, fur some reasons or others. Some hain't got the money, some cain't decide on the kind of silo, some sez it's too much work to haul the crop in and cut it up, some sez it makes the cow's teeth fall out, some sez it gives 'em holler horn and holler tail, some sez it makes the milk turn green, some sez the butter from silage milk won't churn, some sez it makes steers scour, hawgs howl and lambs limp. Anything to put off silo buildin'. I'm a tellin' you folks better git busy and look into this silo business; it'll mean money fur farmers that wants to make beef, mutton, or milk, and I know of some that feed it to hawgs and lots of it is fed to hosses and mules. I wouldn't starve on it myself if I had to eat some good corn silage.

FARMERS' MAGAZINE

Canada's National Farm Magazine

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA

FARMERS' MAGAZINE is independent of all parties, is the mouthpiece of no organization, is illustrated with many original photo engravings, and handles as many as seventeen departments of farm work in a practical manner, giving absolute and reliable information.

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BEER AND WINE

THE liquor forces have recognized the protest of the country against the open bar and as a last resort have been seeking to play upon the fairmindedness of the people by suggesting a beer and wine license. But the ravages of the old regime are too fresh in the memory of all respectable people to expect any good thing to emanate from liquor dividends. We have enough dives of a questionable character already and rural communities know full well that they suffer most from the drunken orgies originating in the licensed places in towns. The example of Michigan, where the rural parts defeated a move that the foreign voters of Detroit carried, should be an inspiration. Hit the booze hard.

THE COMMUNITY VALUE OF FARM BUILDINGS

PROSPERITY does not tag long around tumble down shacks and treeless farms. The most contented rural communities, even where such places are closed to large centres of population, is where the farm buildings, are well made, and well kept. Perhaps there is no more congenial a farm township than that of Scarboro in York County, Ontario, situated on the border of Toronto, a city of over half a million. Yet here we have the best built-up farms to be found in the Dominion. Splendid farm houses, of brick, stone or lumber, well-equipped, with big basement barns, painted and attractive, fully supplied with the latest labor-saving conveniences, are in evidence on every hand. And these are not owned by city absentee farmers, but by the sons and the daughters of the sturdy pioneers of that wonderfully fertile section. The life on such farms is so attractive, even with a city's call at their doors, that boys do not readly leave the farm for the town or look afar for things they enjoy at home. The lure of the home holds. Good buildings, fences and clay loam are powerful arguments.

Other townships throughout Ontario, farther removed, are pictures of affluence and good content. The buildings prove it. Take a trip through Mariposa or Whitby. Go from St. Mary's to Goderich and take a wide detour to Guelph and note how prosperity snuggles up to paint and livestock. Farm life amid such conditions is most attractive. In fact a well-equipped farm for business throws out a greater challenge to the boy's love for adventure and accomplishment than do many of the other callings of the world.

It has been said that many of these farms now are for sale at less than the cost price of the improvements. In some cases for local reasons, this may be so, but there are reasons. We must not forget though that these improvements have made possible the successful business relations of the past, and have contributed much to the life and comfort of the owners. The call of the West has been mighty, but the call to all Canadian soil will yet be greater than it has been.

One may not force a prosperity by the erection of costly buildings, but one will profit greatly by erecting such buildings as he finds the farm needs demand. He will build slow and well, and add every attractiveness to his work. There is, as Mackenzie King says, a community side to all social questions. And perhaps the community element present in a neat, well-kept farm has more to do with national good will and progress than most people think.

ARBOR DAY MEMORIALS

GALT has decided to plant shade trees as memorials to her soldiers. In the last issue of the FARMERS' MAGAZINE, we made this suggestion as a good one for township councils. It is a most worthy idea and if the money that is voted for the purpose of raising memorials to the departed soldiers, could be used to plant whole avenues of trees along the leading township highways, the future would always hold their memory in reverence. Perhaps those men whose foresight made possible the many roadside lines of maples in many parts of the country, receive more silent commendations than we imagine.

This idea of tree planting to commemorate events has a striking example along the Clyde in Scotland where there is a reproduction of the Battlefield of Waterloo. Here trees of different foliage are so arranged to represent the several armies and their arrangement. For the homeland of Canada which so many brave boys gave their lives, and so many more the best of their years, such a planting tribute would be a notable and lasting one. Monuments and windows are too local. Get out into the open which the boys loved.

HYDRO ELECTRIC DAMAGE

THE Hydro-Electric, while bringing light and power to many farms, carries too much damage to roadside trees to be a welcome visitor to our countryside. Whole lines of splendid maples have been butchered to admit a pole line that could have been done some other way. It is something that should not be tolerated.

TOWNSHIP HORTICULTURAL SOCIETIES

BY a recent act of the Ontario Legislature, Police villages and townships are allowed to form Horticultural Societies and participate in the Government grants. The success that has attended the work of local horticultural societies in our towns and cities has been beyond all expectations and the extension of the privileges should meet with generous support. Too few of our farmers are noted for public-spirited service in their own townships.

There are many ways of township improvement that could be undertaken by such an organization.

The Women's Institutes have done much to make community life more attractive in the purely rural parts. But they do not have funds enough to go ahead far enough. The Horticultural Society could gather together its members from all parts of the township and lay plans for the proper decoration of the roadways; for the cleaning up of unsightly dump heaps; for the encouragement of flower, shrub and vine planting by roadside residences and the planting of trees at decorative points. In fact the way any township could be improved by a little thoughtfulness on the part of a few citizens, would soon astonish every one of us. Not only would it prove of inestimable value to our own farm lives which are at times too dark and dreary, but from a commercial standpoint it would mean so much in its added attractiveness to visitors and the gain in business thereby. Apart from the spiritual or aesthetic value of beauty, there is a commercial value that amply repays. Twenty-five township people are needed to form an association.

FARMERS AND MANUFACTURERS

ATTENTION has been called to the editorial of last issue on the Tariff Tangle, that the comparison between farmers' demands and manufacturers' claims was a most inapt one. The farmers say that they should not be treated on the same basis. All the farmers want is to be left alone to do their work, whereas, pointed out our informant, the manufacturers are not satisfied with this freedom, but demand a protective wall that makes me pay more for all my needs.

We have hoped that some *via media* could be discovered whereby these two great proprietors of business in Canada could assemble for a definite forward march for the good of Canada. Unrestricted free trade is impossible. We are the legatees of a world system and we must compromise our way out of the woods. The extremist in any case should be put down to our national loss and gain account.

EDITORIAL NOTES

THEY smiled when we predicted $20 beef.

GO out and plow if you would think aright.

THERE'S balm for social troubles in the freshly turned soil.

DID some one corner butter in order to palm off the oleo?

NO MAN has any right to a special community privilege.

WOMEN are getting into deliberative councils everywhere.

THE fight for prohibition is on, and every farmer's duty is plain.

LABOR on the farm is in a bad way this year, even worse than last.

OTTAWA will soon be in a seventh heaven, according to the single taxers.

WILL John Kennedy address the mixed council now as the great plain people?

MICHIGANDERS swatted beer and wine, and Ontario farmers are no less temperate.

DAYLIGHT saving is having a trying time of it! The laugh isn't all on the farmers.

THE *Farmers' Sun* has succeeded the *Weekly Sun*, with Powers ready for any Fray Sir!

GOOD barns and good houses are evidences of progress—if a sturdy country folk build them.

THE livestock farmers can be located all over our countryside by their fertile fields and good buildings.

A NATIONAL Livestock Council has gone by the boards. Perhaps we have too many organizations anyway.

SPEEDWAYS should be built by the speeders. The whole trouble about good roads is in the incidence of taxation.

ALL we want, says E. C. Drury of Simcoe, is to be left alone. We do not want to impose upon others for the benefit of our business.

HARTLEY DEWART in the Ontario Legislature is liked by many because he has some pep in his opposition. The world likes a fighter.

THE National Livestock Records Board complain of congestion of business. Business concerns generally know how to remedy such a condition.

CARELESSNESS is the chief cause of farm fires. Send for the most attractive bulletin on Fire Prevention issued by the Ontario Government.

PLAN for better crops, by wise use of fertilizers, green crops, summer-fallow and rotation of crops. The six inches of top soil is what feeds the world.

THE agricultural departments and the educational departments in our provincial legislatures will have to co-operate more if unwise methods of dealing with rural problems do not obtain.

LET us repeat it, that if combinations of capital, to keep down competition, and to upkeep prices, as well as to control labor, were not so rampant and true, there would be less dissatisfaction against the undertakers of industry.

WESTERN farmers are insistent in their lower tariff demands. The Canadian Council of Agriculture in its annual meeting has taken a definite stand against misleading advertisements put out by the Canadian Reconstruction Association.

THERE was some force in the criticism by the farmers of the Ontario Department of Highways when they told them that they would not easily get any definite information on the cost of the Hamilton Highway. If our representatives can hide behind a commission, then commissions should be dispensed with.

Being Up-to-date in the Farm Home

By ETHEL M. CHAPMAN

THE builder who would have an ideal country home must disregard a lot of old architectural customs established by his neighbors, who, in their day, imitated someone else. The farm home of the future will be planned with consideration only for comfort, convenience, beauty and general livableness. The design will be chosen to fit a setting of fields, hills and trees and the plan drawn to suit conditions of farm living. And every individual family will weave into the building of their own house, as far as possible, their own ideas of an ideal home.

The house shown here is typical of the new Canadian farm home. The architectural style is simple and dignified with an air of permanence and durability becoming to a house which may shelter two or three generations. The pleasant arrangement of windows and sun-rooms gives tone of warmth and cheerfulness and hospitality, other qualities essential to the complete farm home, while the interior is planned with a view to the comfort and convenience of the family and to making the housework easier.

The front door opens into a hall with the living-room on the right, the dining-room on the left and a door at the end leading through a short hall to the office. This arrangement makes it possible to take a business visitor from the front door directly to the office without passing through any other room. However, the main entrance to the house will be from the side, where a door from the side porch opens hospitably into the living-room.

The living-room is, naturally, one of the most important rooms of the house since it is the place where the family spend most of their time together and where they entertain their friends. It may seem too large to anyone who has never enjoyed a living-room large enough to allow children to play a game at one end and older people to sit around the fire at the other, or where the young people can have room for a set of the Lancers. There is an abundance of light from windows at one side and one end; at the other end is a wide fireplace with book cases at either side. Instead of the book cases, deep corner seats could be built in.

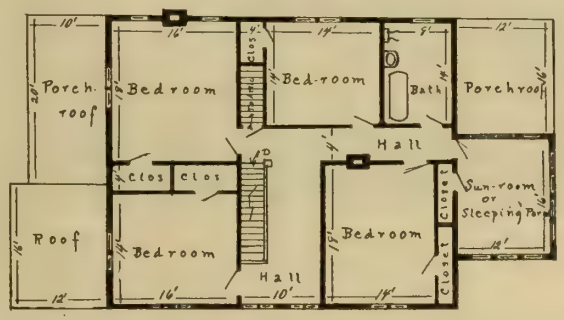
The sun-room makes a delightful little sitting-room or it might be turned into a room of flowers, in which case it might be well to have a cement floor with a drain so that the plants could be watered or sprayed without regard to keeping the floor dry. In a home where there are children, however, the sun-room will serve its best purpose as a bright, fresh-air place for the baby to play or sleep, or as a playroom for the older children when they cannot be out of doors. In a home where it is desired to have a bedroom downstairs, the space in the plan allotted to the sun-room might be used for an office, having windows on only two sides, and with an outside door opening from the porch.

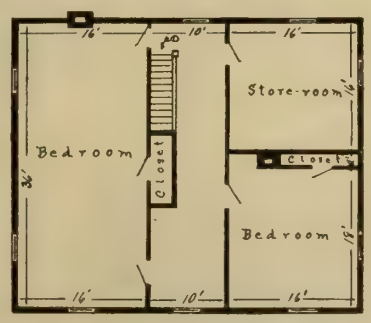
The room which is called the office in the plan could then be used for a bedroom. It is usually inconvenient to have a bedroom on the ground floor when the bathroom is upstairs, but the layout here would give direct connection through the halls from the bedroom to the stairway and bathroom.

The kitchen, pantry and dining-room are placed with a convenient relation to each other. The pantry is well lighted and equipped with cupboards and a table, making it a good room for bread-making and general cookery work—especially if the work table is the top of a cabinet, with flour chest and supply drawers below. With this equipment it is quite convenient to have the cellar way open from this room. The dumb-waiter, which is quite as important to save steps and carrying in the house as are feed-chutes and litter-carriers in the barn, is built in the pantry close to the table and cupboards. The washroom relieves the kitchen of such work as washing, and having an outside door from the porch, the men can come in here and wash, leaving the sink entirely for housekeeping use. The washroom also provides a good place for hanging coats and outdoor things which would otherwise have to find a place in the kitchen. The kitchen is larger than is necessary simply for a work-room. An advantage of this, however, is that a corner out of the way of the sink, stove and working equipment can be fitted up for a rest corner, with a couch and rocker, where a woman can drop down for a rest at odd moments while she "watches the oven."

The good features of the layout upstairs are the large airy bedrooms and the sun-room or sleeping-porch. A second sleeping-porch could be made over the back porch. Having an attic with two rooms which can be used for bedrooms if required, we can afford to give ample space to those on the second floor which will be used continuously. Each bedroom is fitted with a clothes-room—a provision commonly neglected in the farm house of twenty-five years ago.

An architectural style becoming to a home built to shelter possibly two or three generations





Having an attic with two rooms which can be used for bedrooms, allows ample size for the other bedrooms on the second floor.

Some Features of the Up-to-Date Farm House

RUNNING water in the kitchen, with a sink at least thirty-three inches high for a woman of average height, a little higher or lower if necessary to suit the individual worker.

A bathroom. The farm home, more than almost any other home, needs a bathroom. The dirt and soil of the fields and barns is clean dirt, but out of place nevertheless.

A washroom with running water where the men can wash without coming to the kitchen sink and which can also be used as a laundry with a drain for waste water, a stove for boiling clothes and some kind of power washing machine if possible. An office where he can have a desk and filing cabinet for letters and papers, see business callers, and take care of his business generally, is an essential to the up-to-date farmer.

Built-in cupboards with shelves at a convenient height. Shelves should never be built where they can be reached only by climbing, stretching or stooping. There should be no dark, closed-in cupboards under a sink.

A screened porch. For the sake of the comfort and health of the family on the farm, special protection from flies is necessary. By screening in the back porch or whatever porch is used most during the day, the house is provided with a safe out-door sleeping room for a baby, or a place where the housekeeper can take some of her work in hot weather.

A sleeping-porch. Having a place provided for out-door sleeping may be the means of building robust health in a delicate child or aiding the recovery from illness of any member of the family.

An efficient heating system. A poorly heated house is invariably a poorly ventilated house. Windows are not opened because we cannot afford to lose what little heat there is. It is not only uncomfortable but unhealthful.

A fireplace is a splendid natural ventilator. And an open fire is one of the strongest forces in the home to hold the family together. A steam radiator may not stir any home sentiment, but an open fireplace will remain among our longest memories.

Cement walks about the house and platforms or porches before the doors will work miracles in the way of keeping the house clean in wet weather.

The modern farm home is built for livableness and hominess. There are no cheerless, isolated rooms. Wide openings with sliding doors between rooms naturally related to each other, built-in book-cases, and window seats, sun-rooms and porches mark the new ideal in farm home building.

AWAITS EACH ISSUE

SEAFORTH, ONT.

I have read your FARMERS' MAGAZINE *with interest for over a year and eagerly await the coming of each issue.*

EDWARD ARCHIBALD.

Making and Remaking the Farm Barns

A splendid Ontario homestead with a clover field in front.

By ELUID KESTER

SOMEBODY, somewhere, is always thinking of building anew or remodelling the old barns and buildings on his farm. This is necessarily so, because the old decays and new farms are being made. New ideas also demand new equipment. The old many-roofs of our fathers' days do not prevail in our modern farmstead economy. First the log barns of the pioneers gave way to the 50 x 30 framed barn standing on posts. Then the basement stable, with its hip-roof or gambrel roof, became a novelty in the country-side that drew farmers for miles in admiration. Time has improved on these structures where they failed in ventilation. Now, owing to the growing value of wood and the absence of framing materials and skilled local carpenters, the metal barn, with its steel frames and trusses, its steel siding and roofing set on a cement wall, with sliding doors, ventilating flues, windows, and absence of swing beams, has ceased to be, in turn, the wonder of the community.

But we are not by any means at the peak of the barn building knowledge, for year after year adds its improvements as men find the old has faults they could not see until everyday work and service, with wind and weather knocking, taught them wisdom.

It is, therefore, with an idea of assisting those who have occasion to build anything that we review our modern business of barn building. Ideas travel from one province to another. Types of barns differ much interprovincially. The Maritime farmers' needs and styles look out of place in the Ontario farmer's eyes. While the Ontario farmer who goes West soon learns that prairie farming has a type all its own. The French-Canadian barn is in a class by itself. Yet scattered everywhere one sees modern new structures being erected that the traveler recognizes as an accepted standard of animal comfort and storage requirements for field crops.

To the farm-born Canadian there float back through his halls of memory fine, old associations of the old farm barns. The old straw stack, the hide-and-seek in the mows, the hay lofts, pig pens, pen houses, cattle barns, and rough implement sheds were real joy spots to the lads. The spirit of Whittier's Snowbound appeals to many in its wonderful description of life in our early days:

"We reached the barn with merry din,
And roused the prisoned brutes within.
The old horse thrust his long head out,
And grave with wonder gazed about.
The cock his lusty greeting said,
And forth his speckled harem led.
The oxen lashed their tails and hooked,
And mild reproach of hunger looked."

In modern barn building one has to guard against two mistakes often made. They are, planning a building before one's needs are clearly known, and, secondly, following too closely local practices in the work.

By studying plans of buildings erected in various localities, one is certain to get some suggestions and will therefore benefit by the broader outlook. In considering a barn plan, the Manitoba Agricultural College in a bulletin has outlined a number of items that demand consideration. These are arranged under three headings: 1.—Convenience; 2.—Economy; 3 Sanitation.

Under *Convenience* we find the following:

An L-shaped dairy barn with good window arrangement

The framing of a big barn with heavy timbers is a big job. Cement walls underneath.

A large hoghouse, showing arrangement to get sunlight in all pens, while hot sun is excluded in summer time. It is 30 feet wide with an 8-foot alley through the centre

A barn for the corn-growing districts. A metal corn crib shown. Note lightning rods, metal roofs and paint

Arrangement for Feeding:
- Layout of feed passages.
- Animals to face in or out.
- Location of feed room.
- Location of feed boxes.
- Location of grain bins.
- Location of hay chutes.
- Location of doors.
- Location of hay and feed racks.
- Location of root cellar (and capacity).
- Arrangement for using feed carriers (if any).
- Arrangement to provide easy access to, and proper location of a future silo, if none is to be installed with the erection of the building.

Arrangement for Cleaning:
- Location of doors.
- Arrangement for feed carriers and tracks.
- Location of milk room.
- Location of water troughs.
- Location of water tank in loft (if any).
- Location of stairs to loft.
- Arrangements for harness storage.
- Method of storing hay.
- Provision for installing hay forks.
- Arrangement of posts and girders for supporting loft floor in connection with stall partitions and purlin posts.
- Carriage storage.

Under *Economy* we find the following points:

Shape of barn:
- to get least wall area.
- to get economy of floor space.
- to save building material.
- to save in cost of construction.
- to reduce heat loss through walls.

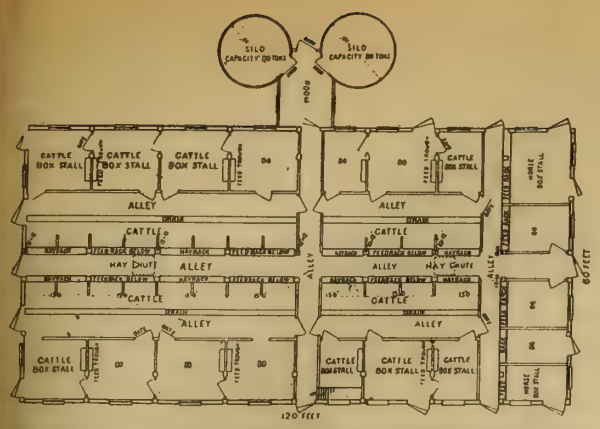
Common types:
- round.
- square.
- rectangular (nearly square).
- rectangular (long and narrow).
- L shaped.
- T shaped.

Type of roof:
- Gable roofed.
- Gambrel or hiproof.
- Shed roof used on one or both sides of the gable or gambrel.
- Appearance.
- Proper dimensions of stalls, passages, doors, mangers, gutters, hay racks, posts, beams, bracing, etc.

Windows:
- size of frames.
- size of lights.
- with few sizes of panes of glass, for economy of repairs.
- Ladder to roof to be readily available in case of fire or for doing repairs, putting up lightning rods, etc.

Under *Sanitation* follow these suggestions:

Lighting:
- Location of windows for distribution of light.
- Obstructions to light.
- Height of windows from floor.
- Kalsomine walls.
- Concrete floors.
- Proper slope to stall, passages, and gutters for good drainage.



The plan of the cattle and horse barns at Whitehall Farm in the United States

Ventilation:
Location of intake and outtakes.
Number and size of outtakes.
Regulation of outtakes.

The Timber Frame Barn

The present-day builder demands a close calculation of the strength of all timbers entering into structure so that each piece of lumber will be only as large as is required to safely withstand the loads to which it is subjected. He also demands that the lumber be so placed that its strength is completely utilized. This attitude on the part of the builder and the realization by many that the old style timber frame construction is not only wasteful of time and material, but also less substantial than it appears, due to large portions of the timbers being cut away by mortises or tenons, created a demand for a different style of framing. The man who is planning to build a timber frame barn will find that the local dealer no longer carries heavy timbers in stock and the shrunken dimensions of those sizes which he does carry plainly indicate an effort to make the supply go as far as possible, says C. I. Griffith of Wisconsin in *Hoard's Dairyman.*

The problems in barn building resulting from this situation have been met and effectually solved by the use of beams and trusses built up of two-inch plank. Entire barns are now constructed from lumber, no piece of which is more than two inches in thickness, The amount of time and labor required to build such a barn, as compared with that required where a timber frame was used, are appreciably reduced. The unobstructed mow space is greatly increased and the general appearance of the building improved. All of these advantages without sacrificing strength or rigidity are secured by the use of the plank frame type of construction.

Methods of Farming

There are two general types of plank frame construction in use at the present time which, for want of better terms, we will call the braced rafter and plank truss methods of framing. The advocates of the braced rafter type of construction claim some slight saving of material and a less obstructed mow space while those in favor of the plank truss claim that it gives increased strength and rigidity to the building.

The sills which are made of two 2-inch by 8-inch pieces are placed upon a ten-inch concrete foundation which extends far enough above the floor and the grade line to keep them always dry. These sills are securely bolted to the foundation by ⅝-inch bolts spaced five feet on centres imbedded in the concrete.

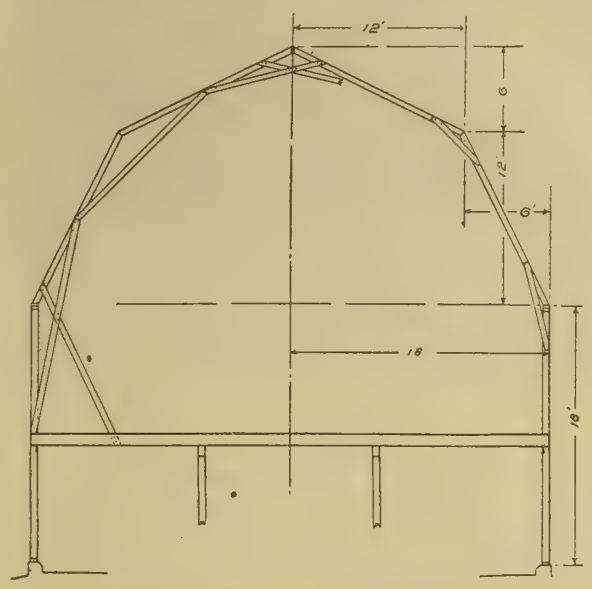
Studding of 2-inch by 8-inch material are nailed to the sills at intervals of 24 inches as this spacing permits the use of stock lengths of siding with the least waste. These studding are usually from 16 to 18 feet long with a double plate of two 2-inch by 8-inch pieces nailed to their upper ends to tie them together firmly and keep them in line. This plate also furnishes a sill for the rafters.

Height of Ceiling

The average height of the ceiling above the walk behind the cows should be from eight feet to eight feet six inches. Heights greater than this increase the cubical content of the stable to a point where it is hard to warm, increase the mow space, and offer no special advantages. The height of the ceiling, of course, depends upon the distance from the floor to bottom of the floor joist. These floor joists are usually 2-inch by 10-inch plank spaced two feet on centres and extending continuously across the building. Thus they serve the purpose of a tie to take any outward thrust transmitted to the studding from the rafters as well as the function of beams to carry the load due to hay in the mow. These joists are usually made up of three 12-foot lengths rigidly spliced over the girders and securely spiked to the studding. Two-inch by four-inch cross bridging placed in rows lengthwise of the barn and at intervals of six feet across the barn will serve to stiffen the joists and prevent them from turning sidewise.

Ordinary shiplap is usually placed on the upper side of the joist to form the hay-loft floor and matched flooring on the under side to form a tight ceiling through which dust and chaff will not sift. This construction also makes the barn warmer and still further strengthens the structure.

The floor joists are supported at the ends by a 2-inch by 6-inch ribbon mortised into the studding and at a distance of twelve feet in from each wall by girders running the full length of the building. These girders are made up of four 2-inch by 12-inch planks using as few lengths as possible and breaking the end joints so that not more than one joint will occur at any one place throughout the length of the



Bracing details for a plank frame bent

barn. Wooden or cast iron columns, filled with concrete piers built below the floor and spaced at intervals varying from 10 to 14 feet, carry these girders.

Raising a Plank Frame Barn

When raising a plank frame barn the studding should be securely braced against wind as soon as they are put in place. Then as the floor joists are put in place more bracing should be added. These braces should remain until the frame work is completed. A temporary floor should next be placed on the joist so that the workmen can move about more freely while assembling and raising the trusses.

The pieces for one complete truss should now be

A garage and workshop on the farm, with arrangements for a stove in the shop

carefully laid out and cut. Then these pieces may be used as patterns for the rest of the trusses. When all rafters, braces, ties, and collar beams have been cut the trusses should be assembled, securely spiking and bolting them together. When all the trusses required have been completed the end truss may be raised to position and securely nailed and braced.

In erecting this end bent, the feet of the truss should be placed at the points where they will rest when the truss is in position. Blocks should now be spiked to the sills at these points forming pivots upon which the feet of the truss will turn as the truss is raised to position. A gin pole should now be erected in the centre of the end of the barn and inclined at an angle of 45 degrees toward the opposite end of the building. A rope is now passed over the gin pole and fastened to the 2-inch by 4-inch piece which is temporarily holding the top of the truss together and the truss hoisted to place by horse or team on the other end of the rope. Two men with guy ropes fastened to either side of the truss should steady it until it is braced and nailed in position.

The second truss should now be raised in a like manner. As soon as it is in position, the side framing which consists of nailing girts, studding, diagonal braces, and upper plate, should be put in place and the whole frame work temporarily braced against wind racking. The remaining trusses are put in place in the same way and the side framing added as rapidly as possible.

The last two trusses when placed in position for raising will project beyond the end of the building and should be supported with props or horses. When all the trusses are in place the purlin plate and ridge pole should be raised to position with block and tackle. The end nailing girts and end braces may now be put in position and the building sided up before the rafters, lookout, and roof boards are put in place. If this order is reversed it will be found difficult to nail the siding on under the cornice.

Planning the Farm and the Building

By A. A. GILMORE

FARM planning and barn designing are so closely related that the agricultural engineer of to-day, must have a good understanding of both if he expects to produce results that will be of real value to the farmer. Generally, the owner of a farm just leaves the fields as they were when his father had it, or as they were when he purchased it. He may know that it could be improved but he has no definite idea of how to work out this improvement. When he needs a new barn, his local carpenter very often makes a rough plan of one that he erected last year for another man who probably had a smaller farm and conducted his farming in an entirely different way. Simply a hit or miss policy and one that our Canadian farm papers are doing all they can to remedy.

How different the results if a definite plan had been prepared showing the fields, fences, gates and giving a complete system of crop rotation. From this an estimate could be made of the amount of hay, grain and corn that would be produced each year. Then we would know how much barn room would be required, how many head of stock the farm would carry and consequently, how much stable room we would need. These are the problems that the agricultural engineer must solve.

In dealing with these in detail, we will consider the farm first, using a one hundred acre dairy farm as an example. We are taking this size of farm because the Caledon Township Survey showed that the owners of small farms barely made wages and because it is so difficult to get sufficient farm help to carry on the work properly on overly large farms.

The illustration (A Typical Farm Layout) shows this farm to be considerably longer than it is wide, not because we consider this the ideal shape, but because this is the shape of a great many Ontario farms, and will be of use to the greatest number. The shape of the farm is something that we cannot change, but the shape of the fields can be made to conform to modern farming operations.

By again referring to the illustration we see that the whole farm is divided into four main divisions, each containing twenty-five acres. These are made considerably longer than they are wide because this allows of a long furrow being plowed and saves time that would be lost in turning at the ends if a short field were planned. This loss amounts to more than the average farmer supposes. Here is some data that will make this point clear; it takes ten and three-quarter hours to plow an acre of land in a field eight rods long and nine and a half hours to do the same amount of work in a field eighteen rods long, while it only takes eight hours when the field is sixty rods long. This shows us that a long field means a big saving in time over a short one where much turning must be done. This is especially true now since tractors have become such a big factor in farm work.

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Why Send Labor Back to Europe?

Alien Labor From a Different Angle

By H. E. McINTYRE

THE United States paid its (for that day) immense Civil War debt by labor. The first transcontinental railroad, the Union and Central Pacific, was finished in 1869. It was started in 1863 while the country was convulsed by war, started with a far-sightedness which has seldom been equalled. Immigration was encouraged in every way. In the Western states immigrants were permitted all rights of citizens, even to the franchise, upon a "declaration of intention" to become citizens. There were whole counties in Indiana, Illinois, Iowa and Wisconsin peopled by German immigrants whose descendants became the best of American citizens. Look to the casualty lists of these states for proof of this statement. Minnesota has its Scandinavian settlement, Olsens, Petersons, Nelsons, Mortensens, men who came to the "land of promise" and wrung the fulfilment of that promise from the virgin soil. This land, which had been a liability of the Federal Government, as a breeding-place for predatory animals which ravished the flocks of the few settlers, and a refuge for the Indians and outlaws who preyed upon all civilization within their reach, this land was transformed from a liability to an asset. In the states further west there was a still greater transformation. The great American desert became the garden spot of the continent. The land which in 1850 was considered worthless, has fed millions of Americans and raised millions of tons of food for the remainder of the world, largely by what we called foreign labor. The land which was of no use to the world at that time is now worth, and paying taxes on, one hundred to two hundred and fifty dollars an acre for farm land and almost any price for city property.

Civil War Cost $6,190,000,000

The cost of the Civil War was six billions, one hundred and ninety million dollars. Part of this was raised during the war, but when the war was over the country faced an indebtedness of over two billions, eight hundred million dollars. This is not a great deal more than Canada's war bill will be, but we must bear in mind that dollars and pancakes looked the same size to the naked eye in those days, and they did not make the pancakes small then, either. This debt had to be met by an exhausted nation. The South was in a state of chaos, and her industries, which were all built up by, and planned for, slave labor, had to be readjusted to meet the new conditions. The great leader Lincoln, who might have steered the Ship of State through this crisis, had been assassinated just when the country needed his guidance in the reconstruction work. This work, being carried on by politicians, most of whom were trying to turn every action into political power, the trials of reconstruction were prolonged beyond measure. Munition workers were thrown out of employment, as at the present time, and between the months of April and October, 1865, the Federal Government mustered out eight hundred thousand soldiers.

Notwithstanding these handicaps, the population of the country increased from 31,443,321 in 1860 to 50,155,783 in 1880. Most of this was in the middle and western states, where new land was put to work. During these two decades the population of Colorado increased from 34,277 to 194,827, of Iowa from 674,913 to 1,978,301, of Kansas from 107,206 to 996,996, of Michigan from 749,113 to 1,636,937, of Minnesota from 172,023 to 780,773, of Nebraska from 28,841 to 452,402, and of Wisconsin from 775,881 to 1,315,497. The states farther east did not increase nearly as much in proportion. We find the population of Ohio increased only from 2,339,511 to 3,198,062.

Canada To-day and Her Resources

Canada stands in the same position to-day. She has millions of acres of undeveloped land and millions more which are only half worked; she has coal in Nova Scotia and British Columbia; coal, copper and iron in New Brunswick; iron, copper, lead, nickel, silver and gold in Ontario, and petroleum also in the last named province. Her timber land is estimated at one billion acres, of which about two hundred million acres are marketable as lumber and the remainder usable for pulp-wood and fire-wood. In the province of Manitoba alone, there are over four million acres of Crown land suitable for agriculture, and in Alberta almost thirty-eight million acres, of which only about twelve and a half millions have been surveyed. Her fisheries on the west coast are still in their infancy and there is a market in Europe for all the grain, lumber, meat, and fish that she can produce. She has water falls which are being harnessed for her industries. In fact she has everything needed for a wonderful expansion, except labor, and now the agitators are advocating sending labor back to Europe, who cannot feed even herself. *If this labor can be put to producing wealth, wealth which can be taxed, wealth which is tangible, how much sooner and more easily will this war debt be paid.* It is impossible to estimate Canada's war bill as yet but it will probably amount to two billions or more by the time the last of the army is demobilized. Why then should we send labor back to Europe and send food and clothing over to them for the rest of their lives? Every ton of food we send to Europe now is helping to raise the cost of food for labor here. Every worker we can keep here will help to lower the price.

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W. J. BLACK
Chairman, Soldiers' Settlement Board

THE administration of the Government's policy is in the hands of Mr. Black, formerly Commissioner of Agriculture for the Dominion and at one time Deputy Minister of Agriculture of the Province of Manitoba and president of the Manitoba Agricultural College. Trained on the farm and possessing accurate knowledge of agricultural conditions, and, moreover, having the broadest sympathy with the returned soldiers, he may be expected to carry out, the programme that has been outlined with the thought chiefly of making life on the farm congenial for the men who have served their country well in the time of its great need. He has the enthusiasm for service that will not admit of failure, a genius for organization and a sound and unerring judgment that have enabled him to carry out many beneficial projects with success during his public life.

Tractor on 100 Acres Pays

By A. E. A., Huron County, Ont.

DURING the stress of war and the call for increased production of foodstuffs, many farmers of Ontario bought tractors. Of these tractors a large percentage have given good satisfaction; if some did not the fault lay, in most cases, with a careless operator. To be a successful tractor operator common sense is needed. A few farmers, when they bought their tractors, thought they would do without horses; this is the most dissatisfied class. In our locality one farmer who owns an 8-16 International, never uses his engine when the ground is very soft, and he doesn't use it to cut grain, draw manure, grain, etc., where much stopping and turning is required. This farmer, an ardent tractor advocate, does his threshing and grinding, also silo-filling with the tractor, as well as his land work on one hundred acres, and claims that it costs less to keep his tractor going, fuel, oil and repairs, for a year than to feed one work horse. In our neighborhood, I have noticed that the men who like their tractor are careful operators, who never let a loose bolt or bearing go unrepaired.

The Stock-taking of Our Leaders

A Call for a Rugged Amos

By THE PROPHET

STOCK-TAKING, national, commercial, and social, is being done now as never before. The awful upheaval of the last four years has thrown upon the bonfire a great deal of the junk accumulated by centuries of heedlessness. As never before, men with brains are asking what is worth while in politics, in business, in religion, in social life. For a month after the war closed, boards of trade and labor councils and Governments busied themselves with planning the things they should undertake. Little did such planners understand the significance of what had taken place. They failed to see that the old order had passed. The old regime had not been changed. It had been abolished. The ten commandments remained and the teachings of Him who fulfilled the law and the prophets still abode with us, but all else had been thrown on the fire, as those who understood clearly saw. The semblance of other things was with us, but it was only the cinder lingering after the fire, to crumble under the first breath of the new wind that was breathing the world into a second creation.

Like a giant waking from his slumber, is the race at the present hour. The tempestuous darkness of the war has been like an awful nightmare. Yet it has been a nightmare which revealed the unreality of the standards by which he had been guided for many a day. "What is worth while?" men are asking everywhere. "What business is worth doing? What fortunes are worth making? What service is worth rendering?" These are queries that press forward with new persistence. Men and women see the folly of nurturing children who accumulate fortunes that bring to them all the luxuries of a luxury-loving age but which, when uncontrolled by moral principles and are unguided by high ideals, mean that they become moral derelicts drifting into the dark. Canadians have been fed on the stuff that says that Ontario is to be the garden of the world, that British Columbia is to outstrip the State of Pennsylvania, that the iron manufacturers of Cape Breton are to outrival those of Pittsburgh, that the Prairie Provinces are to feed not only the Empire but the world. The United States people were constantly hearing that they possess all the best things "in the world." But the old civilization might well say of itself, "We were as them that dreamed." Nine millions of our best and bravest sleep in untimely graves because our fathers and our leaders in church and state did not ask with all earnestness what things were worth while. Old barns had been pulled down and the new ones built, but it required the war to remind us that we had a soul. The dancer drew thousands to her halls; the entertainer was given more reward than the legislator; the church was deserted for the golf links; the Sabbath was changed from the Lord's Day to a "week-end." Then came the trial by fire. As men look into the coming days they look for leaders in church and state who will keep the soul alive as well as attend to business as usual. Everywhere there is the call for the rugged Amos who will demand that the fundamentals of morality be observed in the market, in the legislative assembly, in social life, and in the church. Behind all the unrest that bids fair to break out into a storm more disastrous than the war itself, is the cry for legislation and for a law administration that will see to it that nowhere does the sun shine nor the rain fall upon any man looking in vain for justice.

Throughout the rank and file of the commonwealth of civilization there is a deep dissatisfaction with the conduct of leaders in church and state. Both religion and politics are regarded by men in the lead as some sort of game to be played for all it is worth instead of as the things by which men live. Party is watching party, industry is watching industry, class is eyeing class, with the result that progress hides her head and enterprise languishes.

But stock is being taken of leaders, and of Governments. Anger is growing against incompetency and greed. Rulers who have scorned their oath of office will do well to take warning. The white hot anger before which tyrants have been hurled into oblivion is kindling hour by hour and buttressed privilege and intrenched greed may prepare for judgment.

Farmers Organizations Forge Ahead

By THE EDITOR

CONSIDERABLE progress is being made in organizing the farmers. The Farmers' Clubs throughout Ontario are gradually linking up with the central body of the United Farmers of Ontario. The central organization of each province is theoretically built up around a community of locals, just as is the Saskatchewan grain growers and the United Grain Co. of Winnipeg.

In the West, wheat has been the cementing influence from a commercial standpoint. In the older East, the difficulty of financing the organization and of holding the material interest, in the absence of any outstanding product of general concern, has been one of the greatest obstacles to business strength. Yet wonders in this line have been accomplished in handling farm requirements in wholesale lots and in marketing livestock. The Ontario farmers organized a livestock business in February last, after consultation with the Western farmers, and already their business is approaching the million dollar total in livestock transactions.

They secured a seat on the livestock exchange and in one day in April handled 32 carloads. The business manager of the United Farmers' Co-operative Company expects to do a three million dollar turnover this year, and the surprising success that is attending their efforts is having, what success always carries, a cumulative effect, in drawing more farmers to them. There are always many critical and doubting Thomases among farmers. Many have been so imbued with the belief that farmers cannot organize and hold together, simply because they have never done so entirely. The success of the Western farmers contradicts this delusion. The fact of what has been done in the East already is further evidence of the possibilities.

And against this class organization, other people can make no condemnation. For indeed, as the U. F. O. speakers have said, the newsboys even combine for their own interests, and since agriculture is the greatest single occupation in Canada, their getting together is not only quite legitimate, but is now highly probable. A writer to the FARMERS' MAGAZINE from Kent County, one of the richest parts of old Ontario, says:

"The club has taken root and grown amazingly. . . I do not think there ever was a society as hungry for information as our club. Everyone wanted to know about prices and terms regarding all articles needed by farmers or to be sold by them. . . The first actual business we undertook was the purchase of a carload of corn. . . A committee was appointed to arrange a credit at the bank. This credit scheme required anyone wanting corn to sign an order for the amount and a note to cover the amount. These orders and notes were deposited in the local bank. When the car arrived the banker issued a draft to cover the total and each farmer got his corn after paying his note."

Another reader in Lanark County at the other end of the province says:

"In portions of the County of Lanark there has been in existence for some years co-operative buying and selling organizations. The good done by these associations has been enormous, not only from the financial standpoint but also from the social side. Much has appeared in the farm periodicals during recent years with reference to the United Farmers of Ontario; arrangements were made by the Maple Leaf Club to have representatives of that body come to the town of Carleton Place to address an assembly of farmers with regard to co-operation on a large scale, not only in agricultural products but also in ideas, principles, and platforms that would be a benefit to the entire industry. After an address by Mr. A. A. Powers a resolution was passed unanimously to hook up with the U.F.O. A large membership signed up. The new board includes the district representative."

New Brunswick Alive To It

Secretary Sharpe of New Brunswick reports the sentiment catching like wild fire in New Brunswick. At the recent annual convention at Woodstock, the delegates from the whole province crowded the house and showed great enthusiasm for a strong New Brunswick organization. He writes:

"The delegations were widely representative of the Province while the personnel were of men wide awake to living issues and deeply in earnest to secure for the good of all classes the fullest determination of the farm life of our province. And these men were competent and fearless to show where they stand on questions of social, economic, political, industrial, commercial and educative values. Younger farmers present give promise of future material, not only for this movement but for the public life of N.B. In matters dealt with the convention found just the voices they needed in those of Mr. John Kennedy, of Winnipeg, and Mr. Jean Mason, of Montreal. New Brunswick farmers know that "deep calleth unto deep," after the voices of the Middle and the West have found such an echo from themselves.

"In this convention there was not a spirit of making the farm only pay, but also of making the farm pay for good roads, tariff reform, better taxing systems, better education, improved legislative methods, truer economies, humane social conditions for all, and moral integrity in our Canadian life. All who met in these two days with N. B. farmers could feel the impulse of an awakened and organizing force for truth and righteousness. We drafted the United Farmers' platform as drawn up by the Canadian Council of Agriculture; we demanded the reform of the Senate along the lines of making that body elective, and giving each Province a like number of representatives. We protested against the giving of titles in Canada; favored stock yards, abattoir and cold storage at St. John."

Much unrest is in evidence at Ottawa and throughout the country over the tariff and reconstruction. The Canadian Manufacturers' Association has been really at the back of the Reconstruction Association's advertising, which advertising is keenly resented by many farmers as being misleading and done to divert the urban voters and influence against the farmers. Regarding this Col. J. B. MacLean, President of our company, made the following very sensible observation in the *Financial Post*:

The Canadian Manufacturers' Association—not the great majority of the manufacturers—is to blame. As we have repeatedly pointed out when urging a reorganization, the affairs of the C.M.A. have for years been in the hands of a picayune, pin-headed, self-satisfied Toronto clique, under which an offensive, high-handed attitude towards the public has prevailed. For pointing out where these policies were leading, and for suggesting improvements that ordinary business common sense called for, "Industrial Canada," the official organ of the clique, made bitter and libelous attacks on The Post and Colonel J. B. Maclean, our president. Coupled with this "public be damned" attitude of the association has grown up under the tariff a little group of outrageous monopolies. It is a safe bet that 95 per cent. of the members refused to have anything to do with them. Closely associated with these combines are a few men who have been most active in C.M.A. affairs. Within six months one of these men tried to get the association on record in support of one of the worst combines in the country.

Finally the association leaders have refused—in fact they have been afraid—to meet the free trade leaders in a friendly discussion of the situation, with the object of arriving at a better understanding. They have shown an entire lack of frankness in dealing with the misunderstanding that exists of the great work the manufacturers are doing in the upholding of Canada. Instead of coming out openly and frankly they have hidden behind a subsidiary body—the Industrial Reconstruction Association.

Roderick McKenzie, acting secretary of the Canadian Council of Agriculture, commends the fair attitude of the *Financial Post*, saying that it is one of the most progressive and up-to-date commercial journals in Canada.

Mr. McKenzie claims that the political platform inaugurated by the Canadian Council of Agriculture can well become the basis on which to build a new national policy for Canada. It provides a medium by which the working man, the business man, the mechanic, the artizan, the small manufacturer, and the farmer can meet on common ground and join forces to end the reign of an autocracy of wealth built up on secured privileges.

Regarding the Union Government's flirting with the various questions of tariff, daylight saving and budgets, the *Daily Ontario* in a recent issue, summed up the difficulties as follows:

In the meantime in our domestic economic situation is a great triangle, labor, farming and manufacturing. Unhappily there is no attempt to harmonize the interests of the three. Ottawa destroys the faith of the first two and plays very close and chummy to the third. And in between, at the peaks of the triangle, is a great army of non-producers, who are none the less consumers, and who are suffering as much as any with no voice whatever in the matter. God give us men at Ottawa.

A Rumor From Ottawa

By OUR REPRESENTATIVE

THERE is an extraordinary rumor afloat to the effect that Sir Thomas White is flirting with the Free Traders, with the intention of leading a rejuvenated Liberal party on a low-tariff basis. This is not mentioned so much as a matter of news as an example of to what extent the rumor monger can go when hard pushed. It must be admitted that there is no evidence of it on the surface. The light in the Mackenzie cabin across the way still burns fitfully at all hours, so that if, at any time, one of the wandering boys, sickened of the Unionist husks, should wander back to the old home, he may know that those he left there are ready to welcome him back with tears of forgiveness; but none of the prodigals have as yet made a move.

The only possible basis for this rumor regarding the acting-Premier which even the most vividly imaginative rumorist could conceive, would be that the tutelage of Dr. Michael Clark has been producing results. It may be recalled that, during the early part of the session, the Western apostle of Free Trade made a speech in which he referred to his affection for Sir Thomas White, because he had long ago undertaken his tuition in economic affairs, and regarded him as his most promising and influential pupil. He considered that the acting-Premier had as free and penetrable a mind as he had found in the public life of Canada, and it had been penetrable to Western ideas.

It would be a beautiful thing, then, from a romantic standpoint, at least, if, some evening when the candle is burning low, and perhaps the spirits of the Leader of the Opposition were low also, there should come a timid knock at the back door of the Liberal cabin. The leader of the Old Guard arises (perhaps from his knees, where he has been wrestling in prayer for the errant ones) and goes in his deliberate fashion to the kitchen. He opens the door, and sees two forms standing there in the darkness—a very tall one, and one not so tall. It is Red Michael coming home; and not coming, as the other prodigal did, empty-handed. but with a fine captive of his economic bow and spear.

Tableau!—but not yet. The Leader of the Opposition would have to consider what he would do about it. The Liberal cabin is not large, and there is certainly not room in it for two heads of the household. D. D. McKenzie is as canny a Scotchman as ever came out of Cape Breton, where they are so Scotch that even the negroes there speak Gaelic. He might fall on the neck of the prodigals; but if he did, he would fall feet first. Then he would tell them very pointedly the welcome on the door-mat wasn't meant for them.

Of the two, Sir Thomas White would probably be the more welcome personally. His popularity has increased greatly since he has been leading the House. But the wildest stretch of the imagination cannot make an acceptable low-tariff leader out of the man who headed the Toronto Liberals who bolted in 1911. As for Red Michael, there is about as much enthusiasm for him among the Opposition as there would have been for his namesake, the Archangel, if he had ventured back to Heaven after the fuss he kicked up there. As a matter of fact, there never was very much genuine love for the Cobdenite from Red Deer among the rank and file of the Liberals in the House. He was an attractive show-figure, and his oratory added some eclat to the Liberal party; but the fact that omniscience on economic questions was his foible, and that he had a slight attitude of superiority, which even the best-intentioned Englishman brings with him to "the colonies," always made the Scotchmen in the party slightly uncomfortable in his company. The Liberals are perfectly content to let him work out his own salvation. They know that he has too much to swallow to ever find a home in the Conservative ranks; and, so far as the Liberal party in the House is concerned, if he comes back there will be no bands out to play "See the Conquering Hero Comes."

However the rumor arose, it may be safely put down as one of the certainties in politics that Sir Thomas White has no intention of flirting with the low-tariff or any other wing of the Liberal party.

FITTING *the* STABLES *for* BUSINESS

By ALLEN GRAHAM

Showing a good width of alley mangers, easily cleaned, and the track for feed carrier

As the farmer improves his financial position, he gradually desires to improve the equipment of his stables and sheds. So many contrivances are now on the market that it is quite an easy matter for him to secure almost any form of convenience needed. These can be added as he needs them, or he can equip the new barn with a complete up-to-date arrangement as he is building. And if the farmer is contemplating the immediate making of a paying business of his cattle and other livestock, he will likely want to instal the best, the most permanent, and the most convenient types of stalls, floors, mangers, litter carriers, windows, sheets, stanchions, watering systems, box stalls, doors, etc.

Farm buildings are not modern unless they are equipped with every sort of labor-saving convenience that can be proved practical and profitable. Floors should be of a material which can easily be kept clean, one that will be durable, will not absorb filth, hence sanitary, and not too expensive. Wood floors rot out in a short time and cannot be kept clean. Concrete floors are by all means preferable and are not expensive, taking into consideration the fact that if properly made they require no repairs and can be very easily cleaned and disinfected so as to keep them sanitary. A hard sanitary stable floor does much to lighten labor and increases cleanliness of the barn to an amazing degree. Concrete gutters and mangers and a driveway are natural adjuncts of the concrete dairy barn floor.

Concrete floors made of improperly proportioned, poorly mixed concrete, deposited on natural soil which is constantly wet, will certainly be damp and otherwise unsatisfactory. Where soil conditions are such that the earth is naturally moisture-retaining, it is usually advisable to excavate at the floor site and fill in with 8 or 10 inches of clean gravel containing little sand or perhaps with clean steam coal cinders free from ash. This filling will not only be a first step toward securing good drainage but will act to insulate the floor from the cold earth. Concrete is not a good conductor of cold and will not be any colder than the interior of the building if the foregoing precautions are taken in construction. Wherever a sub-base is used, tile drains leading to a suitable outlet should be provided to prevent water from being retained beneath the floor, otherwise the cinder or gravel fill becomes merely a sump or sink hole.

Dimensions of Cow Stalls

Three feet 6 inches is usually considered the standard width for cow stalls, although for small stock, 3 feet 3 inches is sometimes used. The spacing of the barn bents, or posts, sometimes makes it necessary for the designer to vary the width of stalls a trifle. A 14-foot bent accommodates 4 stalls 3½ feet wide; a 10-foot bent, 3 stalls 3 feet 4 inches wide; and a 12-foot bent, 4 stalls 3 feet wide.

The length of stalls should vary in accordance with the breed of cow which is to occupy the stall. Guernseys and Jerseys will keep clean and sleep comfortably in stalls 4½ feet long, while Holsteins and the larger breeds of cows require 5 feet. Some barns are designed with long stalls at one end of the row and short stalls at the other. There are on the market stanchions so adjusted as to line up the cows on the gutter. The floor should have a slope of about 1 inch between the foot and the head of the stall.

The Mangers

Concrete mangers have now practically replaced those of wood in the modern dairy barn; although they cost more in the first instance than wood, they are permanent and sanitary. Metal mangers and metal manger divisions are frequently used, these being hinged, as a rule, so as to be easily raised out of the way for cleaning. Frequently mangers are made to serve as troughs for watering the stock. Concrete mangers should be made continuous with a drain at one end for cleaning out. The slope should not be so great as to cause the water to run too much to one end. Less slope is required than is necessary in gutters. The manger should be nearly 2½ to 3 feet wide. If it is too wide it will be necessary to walk in the feed troughs to stanchion up the cows. The front of the manger may be from 18 inches to 2 feet high. The back may be from 4 to 12 inches high. In the latter case it is cut down where the stanchions fit, so as to allow the animal to lie down comfortably.

Box and Other Stalls

9 feet x 10 feet makes a good box stall for a bull. Cow pens will do 9 feet x 9 feet.

Hog pens are built with 10-foot or 12-foot fronts and 2-foot gate. They are usually 12 feet deep. This is sufficient for 8 or 9 hogs.

Stave silo with concrete base on Bonnie Brae Stock Farm at Carroll, Manitoba. The proprietor, Jas. Turner, was formerly an Ontario farmer. The character of this building would denote this latter fact. Angus cattle, young lambs ready for spring.

Horse box stalls should be 12 feet x 12 feet, and not less than 10 feet x 12 feet. Tie-up stalls for horses are 5 feet to 6 feet wide x 9 feet long.

Horse Stalls

Some farmers stable their horses in the same barn with the cows. Horses should always be at the north end, leaving the sunny south part for the cattle. This position is usually more convenient for attending to both horses and cattle.

There should always be a partition between the horses and cows. The cost of boarding this up is not great. Odors from the horse stable should not be allowed in the dairy barn, and it is not desirable to disturb the cows by any of the confusion of hitching and unhitching horses.

Calf Pens

When calf pens are required, if they cannot be put in a separate calf barn, it is well to have them in the horse barn where their bawling will not worry the mothers. Of course, if they cannot be placed there, have them at either end of the row of cow stalls. The same ideas should be followed in placing the bull pen.

Another type of alley, and manger with windows for ventilation without drafts. These stable equipments can be bought as desired, and added either all at once in a new building or piece by piece till the whole business plant of the farm is fitted up for money-making for dairy or beef.

The light where the milking is done in a well equipped stable.

Have the pen near the door to make it unnecessary to take the bull along the passages near the cows.

Silos and Feed Room

Silos are usually placed near ends of a rectangular barn, to hide as little light as possible. In a T-shaped barn, silos are invariably in the angles between the stroke and top of the T.

Silos should not be built too close to barn yards. It is not well to have the feed so close to the manure pile, nor to be forced to haul corn for cutting into silage, through the yard.

There should be a feed mixing room near the silo. It is convenient for taking care of the ensilage as it is thrown down. This room should be large enough to allow different kinds of feed to be brought together in it and mixed. It should be so placed so that it would be handy to the supply of feed and the cows. Many keep the cutting box, grinder and root pulper in the feed room.

In the matter of stall partitions, stanchions, water bowls, gates, etc., it is well to study the various catalogues of the barn equipment manufacturers before deciding on your requirements. You are sure to get a few new ideas, and even to suggest to them some ways that might improve their plans to meet your requirements.

THE SILO IN WESTERN CANADA

Continued from page 9

corn. Mr. Hutton found that a considerable reduction in the cost of producing butter could be effected by providing peas and oats silage as compared with the use of the same fodder cut green, shocked, stacked and fed during the winter as cured green feed. In the winter of 1914-15 this saving was approximately 7 cents a pound in favor of the silage. Peas and oats at the Lacombe farm are sown at the rate of one bushel of peas and two bushels of oats to the acre, the crop being cut with the binder and put into the silo at once. The yield per acre of the green fodder is from 8 to 12 tons, depending upon conditions.

The silo is an assured success in the West. Pages of testimonials could be given by actual users, but the best evidence of their satisfaction is the fact that any cattle feeder who has used one would not think of being without it. We have not reached the point of some of the States of the Union, where campaigns are being launched for "a silo for every farm," but with the gradual growth of mixed farming and intelligent cattle feeding, which is now on the Western horizon, the march of the silo will be simultaneous. It is an essential to the economic feeding of cattle in the districts of the West where indoor winter feeding is practised.

WILLING TO AGREE TO DIFFER

By J. S. Warren

So far as your political views are concerned, I have not found you either, "a scheming Grit," or one of "the old Conservative bunch," but decidedly independent; and, while I agree with you on many points, on others I am willing to "agree to differ."

More power to your elbow. May your circulation ever increase, and your shadow never grow less.

Laying Out Land for Tractor Plowing

By F. H. SWEET

IN laying out a field for plowing with a tractor, one should do away with all unnecessary traveling, as it is simply a waste of fuel and time, and wears out the tractor without giving returns. A field should therefore be plowed systematically.

One of the best ways to plow a rectangular field is by use of the continuous furrow. If this plan is followed, the first thing to do is to set stakes along the centre line of the field. This line of stakes should extend ten or fifteen feet closer to the ends of the field than it is to the sides, which will allow for narrowing the furrows in turning at the ends.

The first tractor furrow should follow the stakes which have been set up. When the tractor reaches the end of the stakes, the plows should be lifted, the outfit swung to the right, and then back to the left in a complete circle. At each turn the ends should be rounded as much as possible, so that after a few rounds have been plowed the outfit may be swung around the ends without lifting the plows. Thereafter a continuous furrow may be plowed.

Curve plowing, however, is rather hard on the tractor gears, and a different method is usually recommended. This method is the back plowing or dead-furrow plowing. By this method nearly all the plowing is done on a straight line and the outfit is turned with the plows out of the ground.

To plow by this latter method, leave about forty-five feet all around the field on which to turn the tractor. With one bottom only in the ground, plow around the field to mark this distance. Then at one side of the field, set a line of stakes, sixty feet from the furrow marked off forty-five feet from the fence, and parallel with that furrow. Sixty feet from the line of stakes, set up another line, and 120 feet from the second line of stakes, set up another. The operator now has three lines of stakes to plow by—the first sixty feet from the single furrow plowed as a guide line; the second, sixty feet from the first, and the third, 120 feet from the second.

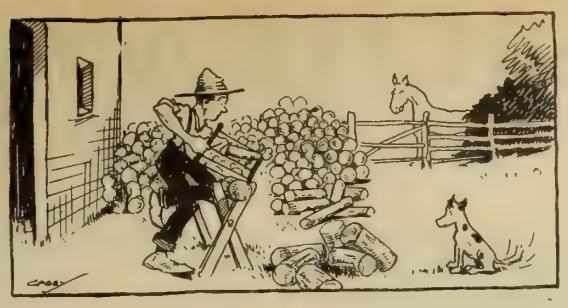
Begin plowing at the right of the first line of stakes and throw the dirt toward them. When the length of the field has been traversed and the marking furrow reached, lift the plows, turn to the left, and go to the third line of stakes. Let the plows into the ground at the marking furrow and throw the dirt toward this third line of stakes. When the opposite end of the field is reached, the tractor is again turned to the left and with the plows out of the ground driven back to the beginning. This round of plowing is continued till the land between the first and second line of stakes, and half the land between the second and third lines of stakes is plowed.

When that has been plowed, the outfit is turned to the left and the dirt thrown toward the second line of stakes. As the opposite side of the field is reached, the tractor is turned to the right, idled to the first line of stakes and then the dirt thrown toward them. These two lands are plowed in the same way as the first two—and then the plowing of the whole field continued in a similar manner. After the centre of the field is plowed, the forty-five foot border should be plowed by the endless furrow method.

Plowing hilly lands requires rare judgment. Where there is a valley in which there is no stream, the plowing may be started in this valley as though it were a rectangular field, the dirt thrown down hill from both sides and the ends idled across if it is thought advisable. Or where there is just a round knoll, it may be plowed with the endless furrow method, throwing the dirt down hill and finishing the plowing on top of the hill. The hill shaped like a horse's hoof may be plowed in the shape of a horseshoe and the space between the "calks" idled across. That is, one part of the hill may be so you can curve around it, but the other has to be mounted. In all cases try not to plow up hill if you can help it; plow with the hill.

A TOWNSHIP PLAN

THE difficulties experienced by new settlers in New Ontario makes many look to some form of standard settlement plans that would do away with the evils that older places experience. F. E. Hawkes of South Gillies would have fewer roads, a central school, co-operative use of machinery, specializing in one breed of cattle, and also would do away with absentee farm operation.



WE ARE STILL SAWING WOOD

FARMERS' MAGAZINE *is moving steadily forward in the affections of Canadian farmers. The sheaf of letters received since last issue carry much encouragement to the staff who are leaving no stone unturned to make each issue better than the last one. Here are a few good things to look for in May 1st:*

The Guardians of the Pure-Bred Ayrshire Cow.

Burbank in the Realm of Fruit. (Second in the series).

Tractor Drivers Get the Threshing Bug.

Planning the Front of a Big Farm.

What is the Ideal Tractor? (Second of the series).

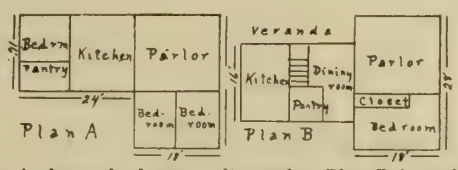
Striking Lands Out for a Tractor.

The regular departments of all farm work will be full of interesting information as usual. A special livestock announcement appears in the next issue.

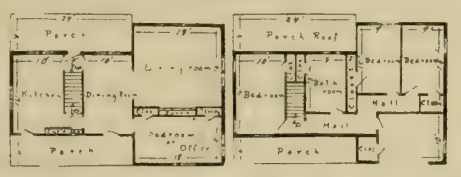
REMODELLING THE FARM HOUSE

Picton, Ont.

"WE *take the liberty of enclosing a rough plan of our house and would like you to help us in planning for convenience. The plan A is just as the house is at present, but we wish to change it something after the arrangement in plan B. As it is in A there is no upstairs. In plan B we would like a small hall with the stairs leading up, and we thought on account of the narrowness of the building there would have to be a landing*



Plan A shows the house as it stands. Plan B is a sketch of the owner's idea of the plan as he would like to have it remodelled



uggested Plan for remodelling, omitting the pantry and putting in a cupboard and dumb waiter

Suggested plan for remodelling with a different placing of the stairs

about six feet high, with a turn bringing the head of the stairs towards the centre of the building. As you see in B the rooms we would like downstairs are: kitchen, dining-room, pantry, parlor and bedroom with closet. On the second floor we want bedrooms with a closet for each and a bathroom.—H. J. W."

Answer.—We are offering two suggestions for remodelling your house. The first is very much like your own sketch except that we have omitted the pantry and put in a cupboard and dumb-waiter. You could of course build a little square pantry around the cellar way and where the cupboard and dumbwaiter now are. The second plan shows another way of placing the stairs. This is not so central perhaps, but it gives a better connection between the downstairs bedroom and the bathroom. The upstairs plans we hope will suit your needs.—GENEVIEVE.

Purebreds Are Increasing in Canada

By F. C. MACKENZIE

FEES amounting to $46,000 were paid into the the treasury of the National Livestock Records Association during the first three months of this year. This is almost double the receipts for the same three months of 1913, the last pre-war year. And these fees, said the accountant, John W. Brant, are for the most part for current business of the breeders of Canada, and shows a most healthy state of affairs among Canadian livestock men.

Wm. Smith, M.P., president of the board since 1912, presided over the 14th annual meeting of the association in the Carls-Rite Hotel, Toronto, with a very fair attendance of the members. He referred in his address to the part the Board had played in financing or otherwise assisting in the plan to organize a National Livestock Council, which had made a splendid bid to existence during the year, but had struck a snag over some differences between the Eastern and the Western Livestock Unions, and apparently the idea was dead. "And I cannot say that I am sorry, yet some things that were accomplished are to its credit," declared the Chairman.

In referring to the proposal of the Dominion Government to erect a cold storage plant at Montreal, he contended that part of this money should have been spent at Halifax, where vessels could dock the whole year round. He concluded with an explanation for the delay in the Records Office in getting out pedigrees on time. Because of the excess of work with a staff that had to be trained and in quarters much too small for them, and because of the emergent demands from time to time by breeders who were holding sales, but who had neglected to keep up their records, the clerks were taken from their regular work to attend to these. Thus regular recorders of their pedigrees were penalized, and he did not deem this quite the thing.

The question of the past year's fight over freight rates was discussed by Peter White and others, who ventured the sally that perhaps now that the Government is taking over the railways they will settle their troubles after the manner of Daylight Saving.

The Dual Language

Robert Miller contended that a committee named by the Chairman should be appointed to attend to all such questions of freight rates and to see if we could not get our minimum weights changed or the rates reduced. It is notorious, said he, that the minimum weight for a bull under 12 months should be 1,000 lbs., and if it is a day older 3,000 lbs. This motion was seconded by H. M. Robinson and carried unanimously.

A feature of the meeting was the presence of several French-Canadian delegates, who made speeches in English and French. Mr. Sylvestre, who has often shown at the Canadian National Exhibition, said that the French-Canadian breeders were doing their best to promote the purebred interests. He would like to see some French-Canadian representatives on its board. Mr. Miller said that Mr. Ness had always been looked upon as their representative as he spoke French so well.

Association for Reciprocity

Col. McEwen brought up the question of reciprocity in pure-bred registrations with the U.S., and was told by the Secretary that this was being worked out by the individual associations making working arrangements and much was being done. It was possible now to have many certificates in each country fully recognized in the other.

The election of officers took little time, as the whole board was re-elected. The financial statement showed total expenditures of $51,614.17.

The committee working on the erection of a monument to the late John Bright, Livestock Commissioner, reported that the unveiling of the monument at Groveside Cemetery, Brooklin, would take place in May or June next.

FARMERS OUGHT TO HAVE BETTER RETURNS

ACTON, ONT.

I like your magazine very much and I am especially interested in the efforts which you are making for more conveniences in the farm homes. We have got to receive a fair return for our labor and capital, though, before we can afford the more expensive ones, such as electric light. The future holds a fair promise of that, I think, but in the past farmers did not receive a fair return of their labor, to say nothing of interest on capital invested. MRS. THOS. ROGERSON.

THE FORTNIGHT *in the* COMMONS

By T. M. FRASER

Our Own Correspondent

THERE has been another Government caucus, principally taken part in by the Western members who are still clamoring for tariff reduction, and do not mean to be put off. On Tuesday the Western Ministers, Messrs. Calder, Crerar, Burrel and Meighen, sat in with the low tariff men and heard what they had to say, without saying very much themselves.

Harmony prevailed. It takes two to make dissension, and the Ministers listened attentively to the representations made, although they said they could not commit the rest of the Cabinet to the sympathy which they themselves entertained towards the sentiments expressed.

The proposals made regarding the tariff were along the line of those made at previous caucuses. The removal of the duty on cement and oils was asked for. A big cut was proposed in harness and leather goods. Small tractors are now on the free list, and it was asked that tractors of greater horse-power up to 15-30, be also made free, a good deal of sentiment being expressed for the removal of duty from all tractors except the very largest ones, of which there are few used. Substantial reductions were requested in cotton and woollen goods.

Hit Luxuries Hard

The tariff reformers are hot on the trail of the luxuries. They made a distinction, for example, in boots. Footwear worn by ordinary plain people should be reduced, and those fancy, high boots which the ultra-fashionable now affect should be taxed heavily.

With regard to the 7 1-2 per cent. war tax, not much is heard of Mr. Maharg's demand that this should come off holus-bolus. The spirit of the caucus was that it should be removed or reduced on articles of necessity in common use, and left on the luxuries. As this would provide revenue, which is the great desideratum, and as no one has very much sympathy in this stage of the world's history for those who spend their money on luxuries, it is not unlikely that the Government will give a good deal of weight to such proposals.

One of the striking features of the session is the advance which Sir Thomas White has made in popular favor in the House. Everyone agrees that he has made good as leader of the Government. He has kept his somewhat difficult following well in hand so far, and if he can get the budget through without raising too much trouble, Sir Robert Borden may return to find that the understudy in the part has overshadowed the principal actor. Sir Thomas has developed a vein of geniality which seemed to be foreign to his nature altogether. During his first years in the House he took everything with intense seriousness, and was inclined to wear himself out with worrying. Now he is realizing the necessity of taking things easier. He is becoming a mixer. He is a constant student of the newspapers, something which Sir Robert Borden was not. In fact, the Premier made rather a boast of the fact that he never paid any attention to the press.

If the making of the budget were entirely in the hands of Sir Thomas White, it is not unlikely that there would be some surprises, and it would be found that his sympathies have grown broad enough to extend to some who least expect it. To a recent delegation seeking certain help through the medium of the tariff, the acting Premier turned to one of his advisers from the Department of Finance and asked: "What would the people as a whole think of this? How would it affect them?" It was not always so.

Not only he, but all the House, with the exception of a small group of extreme protectionists, seem to have realized that there must be a departure from the old Tory doctrine of high protection. Haman's gallows must come down. If it were not for the difficulty of providing a revenue at a time when the Government is at its wits' end to determine where the hundred millions shortage which worries Mr. Carvell so much is to come from, the tariff would get a biff this session which would astonish the old timers.

Cabinet Reconstruction

Possible Cabinet reconstruction is being discussed informally among the members. It is probable that Mr. Crerar will seize an early opportunity to leave the Government. He still retains his position as head of the Grain Growers Grain Company, which is understood to be worth about ten thousand dollars a year to him. The farmers who constitute the shareholders in that company are said to be chafing a little at his absence; and it is well known that he himself is anxious to get back to it. He has frequently stated of late that it is his intention to return to his work in the very near future; and Sir Robert Borden will not be back long before Mr. Crerar leaves the Government, although he will retain his seat in the House, Mr. Burrell, also, will seize the first opportunity to seek translation to the Senate or elsewhere.

There are several pressing contestants for the first Western seat in the Cabinet that opens up. Mr. Stevans, of Vancouver, drops into a vacant seat on the front benches to converse with a Minister now then; and always seems reluctant to go back. He looks as though he thought it an excellent fit. Mr. Green, of Kootenay, is his strongest Western rival; and so keen is the rivalry between the two that the Government will probably have to resort to the old expedient and choose a dark horse. Neither Mr. Stevens nor Mr. Green could be fairly called Cabinet material; although the former is a pretty active member, and has been particularly active this session in pushing himself to the front. As both seem to have their eye on Mr. Crerar's portfolio, the Government might possibly solve the difficulty by offering it to Mr. Tolmie, of Victoria, B. C., who is a well-known stock breeder, and well thought of.

Can Some Men Think in Dollars?

It is always a field day for the Maritime Provinces when the Trade and Commerce estimates are up in the House; and Tuesday, April 8th., saw the annual repetition of that cross-firing between Ontario and the Provinces by the sea which occurs whenever the matter of steamship subsidies is up. Both the Government and Opposition found members swapping sympathy and recriminations cross the floor. After one of his followers had got up and protested against the voting of subsidies to small steamship lines in the Maritime Provinces year after year, the leader of the Opposition dryly remarked that it was extraordinary how some members would let votes for millions go through with a whoop, and get greatly excited over a trifling little amount for a harmless, necessary steamship line to bring the remote parts of Cape Breton into touch with the great outside world. He said he thought possibly there might be some truth in a recent article in MACLEAN'S MAGAZINE, in which the writer stated that the members of Parliament were unable to think in sums larger than cents.

The West, through the voice of Mr. R. L. Richardson, also raised a protest against any further subsidizing of transportation lines. The inevitable retort—and it was not lacking—was, of course, the millions that have been paid in subsidies and grants to Western railway lines; but Mr. Richardson is never bothered very much by inconsistency.

The most extraordinary incident in connection with the discussion however, occurred when the acting Minister of Trade and Commerce arose and stated that Robert Dollar, the great American steamship owner, was proposing to operate a line between Vancouver and New York—and would not take a subsidy from the Government. The only dollar he needs in subsidy for his enterprise is Robert. The House was almost paralyzed. Would there were more like him! And he is Canadian born, too.

Daylight Saving

Daylight Saving, as anticipated in this correspondence in the last issue of the FARMERS' MAGAZINE, was killed in the House. This was the first time the farmers in the House really showed their metal, and it scared some people. Its death was helped by the fact that, while there was a pretty strong organized opposition to it, those who favored it did so in a sort of academic way; and had made no concerted effort to put it through. Organization is needed in getting legislation through Parliament, or in killing it, on occasion, as any member finds out before he is long in the House. Great is the lobbyist. The man who has least trouble in having his little votes and appropriations through the House is the one who is best liked. There was an illustration of this on Tuesday, April 8th, when the estimates were under discussion. The Ministers concerned were both former Liberals. Hon. Frank Carvell had barely got started before there was a row on, and he was held up all the afternoon. It may be imagined that a Minister who was known as "Fighting Frank" when he was following Sir Wilfred Laurier would have some old scores chalked up against him. In the evening the acting Minister of Trade and Commerce (and of Marine and Fisheries and various other departments) Hon. A. K. Maclean, came on with his little list, and had very little trouble. It is all the difference between "suaviter in modo," and "fortiter in re." Everyone likes "A. K." on both sides of the House; and no one will go out of the way to make unnecessary trouble for him.

Railways and Other Things

A great deal of the time of the House has been taken up during the past fortnight with the Grand Trunk Railway, and its orphan child, the Grand Trunk Pacific. The latter has been adopted by the Government, and the former will also have to be taken into the family, having no visible means of support. The question is one of terms. The shareholders of the Grand Trunk, who are mainly in Great Britain, and the English directors and managers of the road, are clamoring against the possibility of the Government taking over their holding on a marked-down basis. All the shareholders of the road are, apparently, widows and orphans; it is always so with a busted railroad.

The Government feels that it should be just to the Canadian Taxpayer before it is generous to the British widows and orphans. It does not restrain its sympathy for them; but is inclined to fasten their troubles where they really belong—on the incompetent shoulders of the directors and officials of the road in the old country, who are trying to escape from the onus by raising a clamor against the Canadian Government. The point being made by English officials of the road is that the Grand Trunk should be treated as generously as the Canadian Northern. Instead of "generously" read "foolishly," and you will get about the sense of the feeling in the House. Parliament is beginning to realize, and it will soon come home to the country with a shock, that Canada is having a burden piled up on her shoulders, in one way and another, which will crush or cripple her if it goes much further. It is sorry for the people in Great Britain who are loaded up with Grand Trunk shares; but is sorrier for the people of Canada.

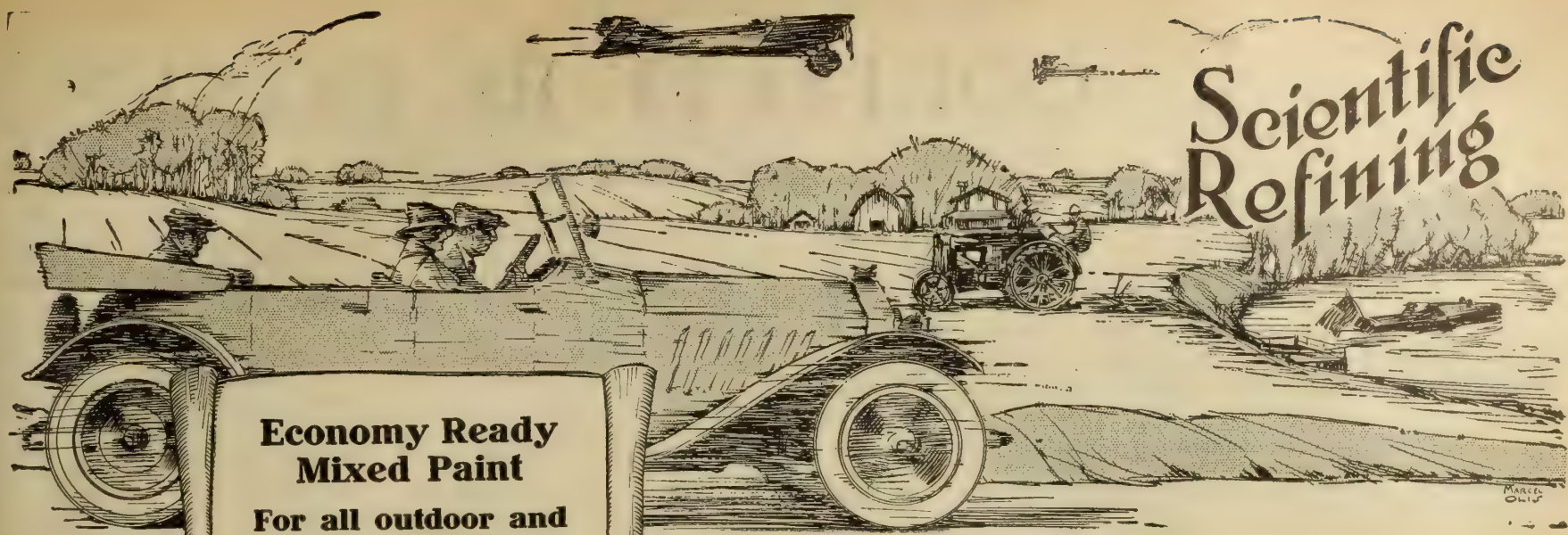
There is a Bankruptcy Act pursuing its leisurely course through the House, Canada had one many years ago; it was repealed in 1880 after having been found unsatisfactory, for several reasons. Let us hope that the Bankruptcy Act will be of no interest to farmers; but, in case it should be, it may be pointed out that it applies to all persons, firms and corporations in Canada—except farmers. Farmers may, if they so desire, take advantage of its provisions; but they cannot be compulsorily forced into bankruptcy.

The fate which is likely to meet proposals involving large expenditure of public money is indicated by what happened to a proposal for the resuming of work on the Georgian Bay canal. The member for Nipissing introduced a motion covering it, and was getting along swimmingly until it was casually suggested that the cost would be over twenty million dollars. The Minister of Public Works, Hon. Frank Carvell, who every now and then reminds the House that, so far as he can see, we are going to be one hundred millions short on revenue, took a hand in, and said we had "to put the brakes on somewhere, and he would like to see them put on a good deal harder in a good many spots than they are being put on at the present time in connection with the expenditure of borrowed money." Other members were sympathetic towards the proposal in an abstract way; but every one got up against the money difficulty.

On the same day, the House discussed bank mergers. The matter has been before the public because of the recent merger of the Bank of Ottawa with the Bank of Nova Scotia—to which very strong opposition was expressed by the people of Ottawa and elsewhere within the Bank of Ottawa's sphere of operations. Hon. Rodolphe Lemieux asked for a detailed statement of all bank mergers in Canada since 1911. This opened up the discussion, and the banks heard some pretty frank opinions about themselves. Sir Thomas White defended them and could not recall any mergers to which exception could be taken. For the expansion of Canada's trade hereafter, strong banking facilities are necessary. Sir Thomas' general attitude was that of the strong friend and defender of the banks; and in the matter of the mergers, he received support from the late Finance Minister, Hon. W. S. Fielding, who said that, while he realized the feeling throughout the country, he did not think the mergers had been harmful so far. The general feeling of the House was very strongly against them, however.

The death of Captain Joseph Read, Liberal member for Prince, P. E. I., removes a picturesque and rather lovable figure from the House. He was commonly known as "The Ancient Mariner," from his long sea experience, long gray beard, tall, gaunt figure, and perhaps, for possessing what are sometimes called "old-fashioned notions." He had one old-fashioned and somewhat out-of-date characteristic—his transparent honesty. There was never any doubt of where Captain Reid stood, or of what he was thinking—he was out with everything he had in his mind. In referring to his death, the leader of the Opposition recalled that Captain Reid, after he had left the sea and went into business on land, met with the common experience of old

Continued on page 35



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COULD IT BE DONE?

By LINA SCHRAG

UNTIL there is a radical change in the regulations governing the system under which our schools are run, they will continue as they are, unless something can be done locally to improve conditions.

The livest force in any community is the force contained in the Women's Institutes. If the force pent up among the members of such an organization could be directed towards a change in local conditions, a great improvement could be effected until such time as the Minister of Education could get to work. More than that, the changes that might be brought about by a number of women, turning their minds towards the improvement of local conditions, might evolve ideas that, passed on to the Educational Department, would assist the Minister and his staff materially in making the much-desired changes.

I am going to take one school section, as I know it to exist, "somewhere in Ontario." I could give the name of this, and five similar sections, within the radius of five miles, less than forty miles from the city of Toronto. But as all the schools are similar in appearance, in surroundings and equipment, the one description will suffice for all.

This school stands on the edge of an unkempt plot of ground, itself devoid of anything pertaining to the attractive in architecture or appearance. There is no grass, only a hard, bare ground, beaten by the feet of the children.

The only shade in the lot is furnished by two dilapidated maples, that the children have swung upon till they have been half killed.

As you enter the porch, you see that it sags drunkenly away from the building. The floor of the porch is warped, the boys have drilled out the centres of the knots, and have left creeping holes for the enterprising mice. Within the schoolroom itself, there is an air of being in keeping with the general surroundings. The four windows boast shades, it is true, but not one of them is sound, three of the four are immovable, and the fourth is raised and lowered by boy power, the boy standing upon the sill of the window.

The only attempt at decoration is achieved by the remnants of the greens left from the annual Christmas concert and a couple of almanacs from dealers in the nearest village.

Now, I am going to have you contrast this effect with the homes, almost all of them wealthy farmsteads, that surround the school. Standing at the front gate of the school, you can look in every direction and see the most beautiful and up-to-date houses and buildings. Scarcely a farm but has two big barns, a splendid driving shed, a garage, with all the other buildings, including milk and ice-houses, of the modern farm.

You know that within these buildings can be found the very latest improvements to be had in connection with the work of the farmer. You realize that here is a class of men with plenty of money, and the business acumen to understand that modern business requires modern methods and modern equipment.

Take a walk with men around the grounds surrounding the farmer's house, here to the left. Could you find such a house as that in the city, unless the owner were a man of extremely good taste and substantial income? Imagine having a quarter of an acre of lawn, edged with lilac bushes, and bridal wreath and snowballs and Tartarian honeysuckle, and dotted here and there with beds of the dear old-fashioned flowers that were planted when the grandmothers of the present owners first "made garden"! Only a city dweller with a fortune could approach such a residence as you may see here.

Come with me indoors to call on the farmer's wife. Peep into the parlor with its splendid piano, for when the farmer buys, he buys only the best. See the fine rugs upon the floors as we pass from room to room, and note the style and quality of the furniture. Come into the kitchen, and note the kitchen cabinet, the sink, the taps, the hot water connection that carries the water up to the bathroom, no innovation in the neighborhood. Out there, in a little shed at the end of the back verandah, is the washing machine, run by gasoline power, with its automatic wringer, and in the woodshed, are stretched lines upon which she may dry her clothes without being exposed to the weather.

It is the old story, "gaze upon this picture, now upon that." You would not think, would you, that people who live and bring up their children among such surroundings would be willing to have the same children spend hours every day in the midst of such surroundings as I described to you a moment ago?

Well, the fact that the school is anything more than a room in which the children spend a certain number of hours each week, engaged in the process of "getting their schooling" has not crossed the minds of more than a bare half dozen in the section. The other half dozen in all probability, when thinking and speaking of the matter, say, "Oh, well, father and grandmother went to school there and what was good enough for them is good enough for our kids, I guess!"

This section of which I have been writing, is a section in which there is a large, active and influential Women's Institute. Their activities, however, have never reached out very far.

Now I am going to suggest that the Women's Institute of this section, and of any other section to which the same description may apply, shall adopt the school nearest to them. Adopt it in the same manner as that in which a woman adopts a child, with the idea of looking after its physical and its spiritual welfare, with the idea of feeding it, clothing it, training it, and making it a thing of beauty and value to the community.

Before any one has time to make the usual remark, I shall say, "It can be done!" I will also say that "No one can say 'No!' to you, but yourself!"

That matter disposed of, I shall continue.

If a woman adopted a child, the very first thing she would do, would be to give it a bath! That is the first thing I would do with the school of my adoption. And I would see after that, that it got its "Saturday regular." Why, I taught in one such school myself, and the trustees thought me little short of crazy when I suggested a scrubbing to take effect during the Easter holidays! That sort of thing was never done.

The next thing a woman would do, would be to dress the child of her adoption, so that the neighbors would say she was "doing the right thing by the child, anyway!" Apply that to the school, and it would mean a new coat of paint, inside and out. It would mean the tearing down and burning of those old blinds, and the installation of new ones, the draping of the windows with pretty muslin, the hanging of a few good pictures, the making of a cushion for the teacher's chair, in short, it would mean turning the school into something as nearly like a home as might be.

So nicely apparelled a child would have to have better surroundings, and so the face of the school-ground would have to be changed to match. In that south corner, there could be a bed of the sweet old-fashioned things that grow in the home-gardens. Over there in the north corner, to cut the winds, there might be a group of the cedars that grow in the nearest swamp. On either side of the door, a flower bed would be in keeping with the rest of the changes, and running along the edge of the walk to the front gate, there might be a flower border. Shade trees would have to be planted, of course, along the fences, in a group there at the southwest corner of the school, to make a shady spot for luncheon in the hot June and September days.

Do your kiddies destroy the property at home, trample and maltreat the flowerbeds on the home lawn, cut gashes in the shade trees in their fathers' lanes? If they take care of the home property, why assume that they would think of doing otherwise with property that you have improved, especially for their benefit? That's good logic, isn't it? So there can be no objection to adopting and caring for the school premises on any such grounds.

With the child adopted, its training is the next matter to undertake. The period before school, the noon hour and the recesses are the time in which the boy or girl find the most opportunity for foolish, wasteful actions.

Therefore, I would secure such activities for the childish minds and hands, as would make the school room and the school grounds, safe for everything fine and lovely that the Institute had thought fit to bestow upon the section. A football for the boys, basketball for the girls, swings, teeters, slides, sandpiles, skipping ropes, for everybody, for the time of year when outdoor games are possible, and ninepins, parcheesi, crokinole, checkers for the days that must be spent indoors.

"Busy children are good children" is a safe motto for any section. The youngsters won't fight over the games if the teacher uses them for an object lesson in unselfishness, courtesy and practical deportment. To have the children play a game and put into practice the main tenets of the Golden Rule would be better than to have them read a library full of stories on the same Golden Rule.

I have left to the last the most practical thing the Institute could do for the child of its adoption, the stove that would provide a hot drink or a hot addition to the cold luncheon. Would not some big girl in the school love to be dismissed half an hour before the rest of the kiddies, in order that she might make the pot of cocoa in which they could indulge as they ate and gossipped about the fire one of those winter days when the snow swirled boisterously past the windows? There are endless opportunities for training the children in such a pastime, through the medium of geography, "Where do we get the cocoa for to-day's drink?" Of arithmetic, "How much will it cost per cup for our cocoa to-day?" Boys who are handy at home, would be no less handy at cooking a pot of cocoa, or a pot of mashed potatoes, than the girls of the school.

Women's Institutes, try it! Don't wait for the man who has so much on his hands now that a radical change in the school system must necessarily be far in the future. Genius, to give you a new definition, is the ability to take that which is at hand, and remake it into that which you desire.

PROFIT IN PIGS

By Ivan McClural

I FED twelve pigs till they were a little over six months old. I sold them in two bunches, the first seven selling at $15.50 per cent. They brought a little over $220. The last five sold for $16.25 per hundred and brought a little over $200. I fed them on barley and oats, using about 175 bushels. The sow was fed out of this also. They got pulped turnips twice a day.

Total revenue from pigs was $426.50. Value of pigs when weaned was $72. Value of turnips $10. Value of grain feed $157.50. Total cost $239.50. Total profit was $187. These would have brought a bigger return but we sold them when market was down.

RURAL MAIL

CHANCE FOR A JACK

W. H. Thomas, of Maidstone, Ont., says he can answer J. A. R.'s question from Saskatchewan in the March 1st issue.

DUST vs. LIQUID SPRAYING

W. H. C., Ontario.—(1) What are the advantages of dust spraying over liquid spraying? Has liquid spraying any points in its favor?

(2) Are the U.F.O. endeavoring to form a third party in this province? Are successful U.F.O. candidates recently elected free to support either Liberal or Conservative parties in the Legislature? Have they a paper published called "United Farmer?" Any other information regarding their aims will be appreciated.

(3) How many volumes of the "Can. Swine Breeders," also "Can. Sheep Breeders' Records," containing pedigrees, have been printed to date?

(4) Will the "Daylight Saving Act" be enacted again this year?

(5) Is the "Agricultural Gazette," now published by Department of Agriculture, Ottawa? Can the ordinary farmer of Ontario get the issues as they are published free, or if not, what sum per annum is charged for it?

Answer.—(1) Dust spraying is so easily done and a large orchard is covered so quickly that spraying is not so hard a job. Liquid spraying is necessary for scale and the first spray.

2. The U.F.O. have not come out with a declaration of such policy. U.F.O. members are free to support either side. In fact Mr. Widdifield's first vote was for the Government. They have purchased the "Weekly Sun" and have discontinued the paper called "The United Farmer of Ontario" with its first issue. Write J. J. Morrison, U.F.O. secretary, King St. E., Toronto, for information.

3. Twenty-eight volumes of the Dominion Swine Breeders and 7 volumes of the Canadian National Records for Sheep.

4. This question you know already.

5. "Agricultural Gazette" is published at Ottawa and can be had for $1 per year.

SHOOTING THE STRAY DOGS

J.S.W., Ontario.—A owns a farm within town limits, but about 1½ miles from business centre. He has been annoyed by stray dogs coming on his land and chasing his sheep and other stock. If A shoots one of these dogs can the owner of said dog have him summoned and make him pay for it, or have him fined?

Answer.—There is a provincial dog law in Ontario that allows any man to shoot any dog found unattended in his sheep fields, pursuing, worrying or wounding any sheep, or which dog is found straying between sunset and sunrise from the premises on which such dog is habitually kept.

BATTERIES AND JUMP SPARK COIL

W.C.B., Sask.—Can a 2 H.P. gas engine be run with wet batteries? If so, how many? And how should they be connected up? Am running it with dry cells and jump spark coil with ground wire. Could you give me any information as to how a jump spark coil is constructed? If you can please make it in simple reading, as I am not posted very much on electric terms.

Answer.—(1) Wet batteries are not satisfactory for jump spark ignition. There is too much internal resistance in them. They work pretty well for make-and-break ignition. The number to use depends on the coil. Some coils are made for six volts and others for nine. You understand, of course, that the coil used with the make-and-break is different from the jump spark coil described below. The make-and-break coil is called an inductance coil and it consists of a spool on which is wound several layers of coarse, insulated copper wire. In the centre of the spool is an iron core usually composed of many fine soft iron wires made of the very best kind of iron. Wet batteries are connected up exactly like dry cells.

(2) The jump-spark coil has two different windings, the inner one is the same as that described above for make-and-break, that is, several layers of coarse, insulated copper wire wound on a spool with a core composed of soft iron. The outer coil is made of very fine wire and there are many turns, so that you see it would require a great length of this fine wire, indeed, sometimes a mile or maybe more. There are two kinds of jump-spark coils, one to be used when the circuit breaker in the primary circuit is separate and distinct from the coil. In such cases the primary current is broken once each revolution of the circuit-breaker and at that time if the two ends of the outside or secondary coil, as it is called, are brought near together there will be one single spark jump between the ends; or if one end of the secondary be connected to the spark and the other end to the engine base there will be one single spark at the spark plug.

The other kind of jump spark coil, which is sometimes called a buzzer coil, has a buzzer which is a part of the jump spark coil, and it is so constructed that the moment the primary current starts to go through the coil the magnetism of the core pulls the buzzer and breaks the circuit. At the moment of the break there is a surge of electricity through the secondary coil which would make a spark at the spark plug. As soon as the circuit is broken the buzzer springs back and remakes the circuit, at which time there is another current in the secondary bigger than the former and going in the opposite direction. The buzzer works very rapidly, probably a thousand times a second or more, consequently, while the engine is "on contact" there will be many sparks pass at the spark plug, and since those in one direction are so much stronger than those in the other they overcome the weaker and the sparks seem all in the one direction.—W.H.D.

ENGINE TROUBLE

G.G.C., Sask.—I have a 10 H.P. marine engine, bought second-hand, taken it apart, cleaned the carbon of piston and rings and connected it up, but it won't run itself, only fire once or twice at a time and doesn't gain speed. It is a jump spark with coil. Coil and batteries are new. They work well. Would like to know the trouble if you could advise me. The carburetor feeds through crank case. Is lubricating oil to be mixed with gasoline or should the oil be poured in the base to be splashed by crank? I used only pure gasoline when I tried to start it.

Answer.—From your description it is absolutely impossible to give any idea of what may be the trouble with your engine. There are so many things that might be wrongly adjusted when putting the engine together that it would be useless to try to answer. Judging by your letter the most probable cause of the trouble is that you have the spark timed wrong, or you may have the carburetor adjusted too rich or too lean.

It is immaterial whether the lubricating oil is mixed with gasoline or poured in the base to be splashed by the crank.—W.H.D.

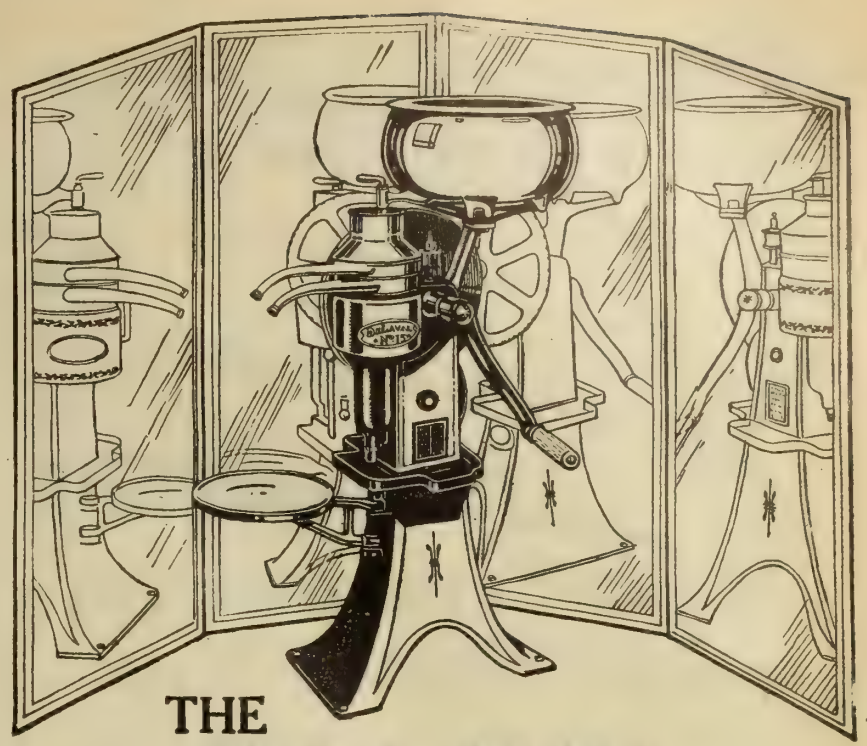
ALMOST A 45 LB. AVERAGE IN CANADA

R. M. HOLTBY, of Port Perry, Ontario, states that the cow, Riverview Pontiac Hopeful, owned jointly with James A. Caskey, of Madoc, Ontario, has recently given birth to a heifer sired by Rag Apple the Great, the only son of the 50-lb. cow. This cow, which has a record of 39.14 lbs., was purchased by Messrs. Holtby and Caskey in the Pine Grove Farmers' sale last year for $3,550. While the owners would undoubtedly have preferred a bull calf from this breeding, it is worthy of note that the heifer has an average for her two nearest dams of 44.91 lbs., which is not equalled by any other animal of any age or breed in the Dominion of Canada.

TARIFF COMMISSION FAVORED

The idea of a Tariff Commission to scientifically treat with Canada's fiscal policy is enthusiastically favored by the railroad workers of Canada, according to an editorial in "The Canadian Railroader." It is argued that both the manufacturer and the farmer are biased on the subject, the former because of his own interests and the latter also because he knows little of the affairs of labor.

It is contended, therefore, that under the present conditions the tariff is a political football, and that its treatment should be taken out of the arena of politics for administration in the best interests of the people.



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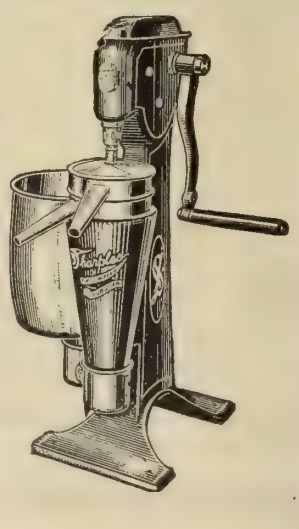

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Making No. 1 Farm Butter

By W. H. UNDERWOOD

CREAM when ripe and ready for churning should have a sharp acid taste and moderately thick and velvety appearance. During the ripening process it is essential that the cream be stirred frequently. When cream remains undisturbed for some time the fat rises in the same way that it does in the milk. Instead of being smooth and glossy it will appear coarse and curdy when poured from a dipper. As a rule quick ripening gives better results than slow, for instance when cream is ripened at a low temperature more or less of a bitter flavor is the result and if kept too long before being churned after it has become ripe enough to churn it will have an off flavor.

In making butter on our farm we never guess at the temperature of the cream during the ripening process and when churning. We use a good dairy thermometer. The mercury is colored red so the temperature is easily read at a glance. A good thermometer can be had cheaply and will pay for itself in a short time. In ripening the cream we bring it to a temperature of 60 degrees and hold it there until it is sufficiently ripe, which takes about 12 hours. When the cream is ripe it is cooled to a temperature of 58 degrees in winter and 52 in summer, at which temperature it is churned.

A Barrel Churn

We use one of the modern types of barrel churn because it churns easily and quickly and there is no dasher inside to beat and break the grain of the butter and make it look like lard with butter color in it. The churn is scalded with boiling water and then cooled with very cold water before the cream is put into it. This freshens the churn and fills the pores of the wood with water so that the cream and butter will not stick. The cream is strained into the churn through a wire strainer. This divides up finely any lumps of thickened milk that may possibly be in the cream and white specks in the butter are avoided. If the cream appears to be too thick we thin it with water until it will run off a wooden ladle nicely, which makes the churning process quicker to finish than when the cream is churned too thick. We never fill the churn more than half full of cream. Overflowing the churn will cause the butter to take a long time to form and the butter will not be of the best quality in every respect because of being churned too long. In the winter time we use just enough butter color to give the butter a light yellow tinge. While the cows are on fresh pasture the grass they consume imparts to the butter all the color needed.

After the cream is put into the churn the lid is securely fastened and the churn is turned a few times, then the bung is opened so as to allow the escape of gases. The churning process requires about 30 minutes. We stop churning when the butter forms irregularly shaped granules about the size of grains of wheat or rice and float at a good height in the buttermilk. When the granules are larger than this it is more difficult to remove the buttermilk and distribute the salt. If butter is overchurned it will contain too much moisture and will not be as good as it otherwise would be. If the temperature of the cream is too high the butter will come in soft lumps and have a greasy appearance and contain a good deal of buttermilk, which will cause it to soon become strong. If the cream is churned at too low a temperature the churning process is retarded and a bitter flavor in the butter is the result.

As soon as the butter is churned the buttermilk is all run off and some pure water at the same temperature of the buttermilk is put in and the churn given a few turns. Then this water is run off and some more fresh water put in and the churn moved back and forth to wash the butter granules. This second water comes off clear as a rule but if not we wash again with a little water. We have found that to use too much water or washing a little too often takes away some of the fine, buttery, toothsome flavor which is so desirable in butter. Too much emphasis cannot be laid on the quality of the water used in washing butter. It should be absolutely free from all vegetable or mossy taste or odor. Minerals should not be in excess save salt and lime and these two not to any great degree.

It is needless to say that none other than the best grade of salt should be used in salting butter. The flake salt is preferable as it dissolves more readily and is not so liable to make motties as other kinds of salt. The amount of salt to use in butter is a matter of taste and opinion. Salt adds flavor to the butter and materially increases its keeping qualities. Very high salting however has a tendency to detract from the fine delicate aroma of butter while at the same time it tends to cover up slight defects in flavor. As a rule one ounce of salt is added to each pound of butter. Many people guess at the number of pounds of butter made at a churning and the quantity of salt used, but this is not a good plan. Both the butter and salt should be weighed. A small scale that weighs to ounces or finer can be had at small cost and will insure the proper quantity of salt being used every time. Salt very readily absorbs odors and must therefore be kept in a clean place where the air is pure and should be at the same temperature as the butter when used. It is very important that the salt be evenly distributed throughout the butter.

No. 1 butter cannot be made without proper working. It is a very easy matter to work butter too much and have it greasy. It should never be worked with the hands because the warmth of the hands will make it greasy and give it a salvy appearance. A butterworker should be used. The type of butterworker we use and which is very satisfactory is one having a stationary bed and corrugated roller arranged so that it can be passed back and forth over the surface of the butter. After the butter has been pressed out with the roller it is divided in the centre, one half laid into the other half and the roller passed over again. This is repeated until the butter assumes a waxy and firm condition. A good butterworker that will meet the requirements of the average buttermaker on the farm will cost not more than $4 or $5 and may be obtained from advertising dealers in dairy supplies.

Butter should be molded into square or brick-shaped one pound prints, a mold being used that makes a handsome imprint. Each print should be carefully wrapped in oiled or parchment paper as soon as molded, and where a number of pounds of good butter are made it is well for the maker to have his name and address or the name of his farm printed on the wrappers in fancy letters. Such wrappers of course do not add to the quality of the butter but they help to make it look attractive. Much of the butter made on the farm is of a poor grade and must of course sell for less than good butter but such need not be the case, for with a little extra care it is just as easy and costs no more to make a No. 1 as it is to make a poor product.

POULTRY

When Hens Have Bad Habits

By GENE DAY

LIKE the self-milking cow, the egg-eating hen is a crook of the barnyard. Criminologists of the livestock world were perplexed until finally they hit on the scheme of covering the udder of the cow that sucked herself with a canvas hood strapped securely to the back of the animal. Another control consisted of a sort of yoke which prevented the cow from turning her head far enough to one side so that she could reach her udder.

To check egg-thievery, a burglar-proof nest has been devised which is equipped with an inclined bottom so that when an egg is laid it slides down the floor of the nest to a box underneath that is inaccessible to the vicious hen which wishes to eat the egg. With dollar a dozen eggs in sight, flock owners are urged to watch for egg-stealing hens and either to reform the fowl or else use them for Sunday dinner.

Usually hens eat eggs because of lack of lime, calcium salts or animal food in their ration or on account of having learned the bad habit from other fowl in the flock. Where eggs are broken in the nest or frozen during cold weather, some of the fowl often pick at the damaged eggs and thus acquire the taste. Generally egg-eating is more common among the heavy breeds of poultry, because these fowl are rather clumsy and break more eggs in the nests than do the lightweight varieties.

Whenever fowl are found in the flock which are fond of eggs, they should be isolated from the rest of the birds immediately and placed where they will have access only to burglar-proof nests. They should be fed plenty of oyster shell as well as all the meat meal, table scraps and green feed which they care for. Their grain should be scattered in deep litter so that they will have to exercise in rustling their food, while the fowl also should be turned out on the range as often as possible. Ordinarily these practices will soon influence the fowl to reform their ways, to the extent that in a week or two they can be turned back with the flock. In case some of the birds do not respond properly to this treatment, the best cure is to kill.

Some poultrymen have cured hens of the egg-eating habit by separating the offending birds from the rest of the flock and feeding them all the unbroken egg shells which the fowl would eat three times daily. About the end of the third day, the crooks usually are cured of their evil ways and are ready for return to the flock. Other flock-owners report satisfactory results from baiting eggs with ground mustard mixed in warm water to a paste or with powdered aloes or tincture of capsicum and placing the decoy eggs where the vicious fowl would be sure to eat them. One dose of any of these materials is sufficient to cure the hens of their liking for eggs. These baits are also valuable controls for dogs that suck eggs, and should be introduced into the eggs through a small hole made in the shell which then can be pasted over with a piece of white paper.

Hens need plenty of lime and calcium salts in their rations as they use these materials for making egg shells. Thin-shelled eggs are often the result of supplying insufficient amounts of lime to the flock, and, furthermore, are a common cause of egg-eating because such eggs are very easily broken in the nests. On this account it is essential to provide the flock with an abundance of oyster shells. In addition, it is a good plan to have the nests face the wall, placing them at least two feet above the floor and keeping them deeply bedded with straw and as dark as possible, as then the hens are not so apt to notice and taste the broken eggs.

As an illustration of why it is necessary to supply plenty of lime, the case of a certain flock of hens is interesting. These birds were fed no lime and were provided with low nests which could easily be reached from the floor with the result that the fowl ate all the eggs as fast as the hens laid them. Later on these same birds, when fed plenty of oyster shell and supplied with secluded nests higher off the floor, never molested a single egg.

Feather pulling and eating is another objectionable vice which occasionally is met with in the flock. Often it is developed by confining active fowl, which have been accustomed to life on the range, in close quarters, and, generally, it is worse during the spring when the molting season is in full blast. The hens prefer the young, succulent feathers whose quills are full of blood. They pull and eat these from the sides and backs of their mates, leaving bare and raw spots denuded of covering. Sometimes lack of grit in the ration as well as the activities of mites and lice so irritate the hens that they start pulling feathers. In fact any cause which produces an abnormal appetite in the fowl predisposes to feather pulling.

The best control for feather stealing is to file the front sides of the beak of each fowl so that the birds can still eat ordinary food but are unable to close their beaks tightly enough so as to grasp and pull feathers. The flock should be fed a well-balanced ration including skim milk, meat scraps, bone, vegetables and green stuff as well as the usual grains. The hens should be kept on the range where they will get lots of exercise, while their grain should be fed in straw where they will have to scratch for it.

In the case of valuable exhibition birds, which develop feather pulling habits, it pays to smear the feathers with lard or vaseline mixed with powdered aloes. As a rule, this control is very efficient in abating the feather-robbing nuisance.

It is rather rare for farm fowl to practise the toe-picking habit, although once in a while it breaks out. This vice consists of scratching at the toes or wings until blood comes from the wound when the birds will eat the blood and pick after more. It is a hard habit to break. An abundance of meat meal, animal food and succulent, green stuff in the ration, as well as plenty of range and exercise for the hens, are the most efficacious measures in stamping out this vice.

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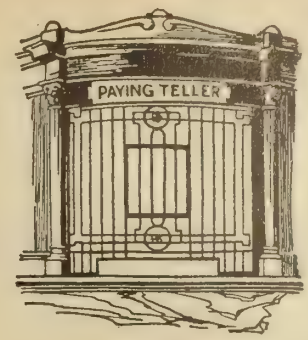

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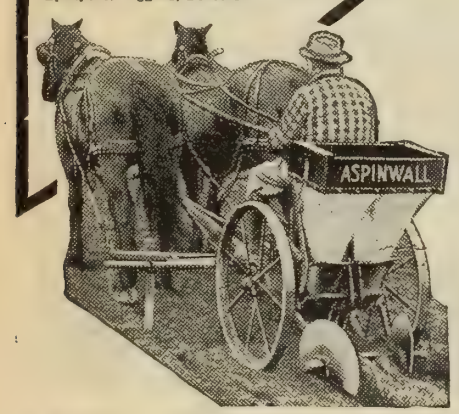

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Livestock is Aviating Over America

Continued from page 7

per cwt. and paying $20.40 for finished bullocks, the $19 to $20 stuff having neither super excellent quality nor high dressing capacity. This is a healthy condition, the plaint of the producer for many years having been that killers had a one-price policy, which did not give quality its just dues. That spreads will continue wide is a logical prediction, as feed is high and this is likely to be a factor. With no distillery cattle to supply hotel demand this year the owner of fat, weighty bullocks is in an independent position.

In considering cattle trade futures, values of other meats must enter into the reckoning. Hogs went on a $20 and $21 basis early in April, sheep are selling at $15 -and $18.50 and lambs $19.50 and $20.50, consequently beef is without serious competition. Rumor of importation has been circulated, but *Europe will be able to absorb the entire South American surplus even if marine refrigeration was available* and it is by no means certain that North American beef will again be required across the Atlantic during the summer and fall months. Hogs may break $2 per cwt. along in June, but the American packer is being kept busy replenishing Europe's empty larder, stocks of provisions will be at low ebb right along and it is doubtful if the common price of hogs will go below $18 per cwt. at Chicago during the summer months, whereas last year difficulty was experienced in maintaining the $15.50 Government minimum. The only possible source of relief is a heavy lamb crop and that meat never has been a formidable competition of beef.

Why Feeders Are Timorous

Both feeders and grazers, taking their cue from packers, are timorous They realize that readjustment is inevitable, and are charting a close-to-shore course, the venturesome ones being in a minority. Owing to high prices for stock cattle repetition of the $5 and $8 margins of the past year is not to be expected, but until production expands materially reversion to prices current two years ago will be impossible. Purchasing capacity, even at unprecedented prices has not been impaired, non-employment is not widespread and those on the payroll are earning good wages. Returning soldiers are being gradually absorbed by the industrial system warranting expectancy that beef production will expand. When skepticism dominates a majority, optimism is warranted.

A problem facing the trade is how feedlots are to be filled next fall, especially if roughage becomes abundant and a good corn crop is harvested. The West will be able to sell anything with a decent beef covering to packers, and unless it intends to go out of the cattle business must hold back young stuff. Beef-bred calves are being conserved east of the Missouri River, it is true, but 75 per cent. of them go to the butcher as yearlings. Good grazing will make Western cattle fat, the butcher will buy them closely and feeders will experience hand picking. Twenty-five years were consumed in liquidating the Western cattle industry; restoration will be an equally tedious process. Breeders of commercial cattle have never been in a similar advantageous position.

A high-hog market is due to enormous exports of product. Eventually European hunger will be appeased, but it is doubtful if this hog crop will be equal to that performance. Although more pigs were raised in 1918 than ever before the winter accumulation of lard and meats has been far below normal. Germany has merely had a few million pounds, all the neutral countries are in semi-famished condition and domestic consumption is a strong factor in maintaining prices. One experiment with *Government price fixing has satisfied growers that regulation of that character is not to their interest* as the logical sequence of the $17.50 minimum maintained during the winter by the Government was unrestrained liquidation by those who were apprehensive that when the Government prop was withdrawn a slump would occur. Instead of supporting the market the Government actually depressed it by stimulating premature selling, consequently when that incentive to unload was removed growers became aware of the intrinsic value of their property, congestion ceased and values advanced $2.50 and $3 per cwt. The only satisfactory method of price fixing would be an all-the-year-round scale, which, being in violation of the law of supply and demand, is impracticable. No more is heard of the 16 to 1 ratio, the fact being realized that price fixing is not a legitimate Governmental function. Hog trade conditions are exactly the reverse of the corresponding period of 1918 when the heavy movement was in the inception stage. With the exception of September a new set of hog market records will be made this year.

Increase in lamb production is evident in every section of the country owing to agitation along that line recently. A current $19.50 and $20.50 lamb market is merely a temporary affair, lower prices being scheduled for June. A campaign to increase consumption of lamb has been inaugurated by the National Wool Growers' Association, 75 per cent. of the commercial supply being consumed at present in a dozen big cities, New York, Philadelphia and Boston taking the major portion. There is danger of repetition of last year's demoralization in lamb trade during the August to November period.

A Summary of Future Outlook

A reasonable summary of summer and fall livestock market prospects follows:

Light summer feeding east of the Missouri River owing to cultivation of pastures and shortage of feed.

Early grass cattle from Western pastures, but a heavy shortage in beef tonnage compared with last year.

Wide spreads between common and choice steers.

Lower prices for cows and canning grades, owing to elimination of military requirements.

Unprecedented shortage of stock cattle during the fall season.

Gradual readjustment of values, but no possibility of return to pre-war prices.

Enormous demand for breeding stock when feed shortage conditions are relieved in the pastoral region.

A high summer hog market, but with price somewhat lower than the April and May basis.

High prices for sheep and lambs until July, with an abrupt drop in values during the last half of the year.

The prospect for pure-bred cattle is excellent. A nation-wide campaign for elimination of the grade bull has been started, favored by popular sentiment which has already created a broad market for ordinary registered bulls.

Packers are ransacking South America for beef to supply the European market. They have invaded Columbia, Venezuela, Paraguay and Brazil, expending many millions on slaughtering facilities and laying plans for permanent operation in these spheres. Volume is the keynote of their business and to secure it they intend to ransack every nook and cranny of this mundane sphere where the bovine maintains a footing.

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TRUCK FARMING

Two Types of Vegetable Growing

By V. A. ALEXANDER

WE have in Ontario two chief types of vegetable growing. One is the intensive, or market garden type, where there are a variety of vegetables grown, and cropping and recropping has to be practised continually throughout the year; the other type of vegetable growing is extensive, and commonly known as truck vegetables, and grows them on a larger scale. Whether you choose the first type mentioned or the second type, you should use the most up-to-date implements and cultured methods.

The question of which type of vegetable growing brings the largest profits, depends entirely on the management of the farm. The market type of gardening brings a constant income, while the truck type brings its returns in the fall after the crop has been marketed.

The foundation of commercial vegetable growing is the ability to propagate strong, healthy and early plants, ready for outdoor life after all frost in the spring has disappeared. Before we can undertake the propagation of the above mentioned plants, we need to have the following essentials: being a greenhouse or hot-beds, ordinary wooden flats, and some cold frames.

In the spring of the year, about the first of March, is the time to put a hot-bed into operation. This is done by first locating a place on the south side of any building or fence, then clearing any snow away that is in the spot where you intend having the hot-beds. If necessary remove a little earth and so enable the hot-bed frames to sit down flat. The frames are generally made out of rough 12-inch boards an inch thick and 6 feet long, 3 feet wide at the front, and 1 foot high and 3 feet wide at the back, and 18 inches high. The back of the frame is elevated a little higher than the front part, so allowing the rain to run off, and permitting more sunlight to enter. The hot-bed is made from fresh-heated horse manure and rich loam. The manure is left in a pile till it commences to heat, and then it is forked into the frames about 4 to 5 inches thick over each bed. After the manure, comes a three-inch layer of loam, spread evenly over the manure. The sashes are then put over the frames and the beds are left for two or three days till they become well heated. When the temperature is 70 to 80 degrees Fahrenheit, it is the best time for seed to be sown. Any higher temperature than 80 degrees is not advisable. The seeds are neatly planted in rows, sown at the rate of one-eighth to one-quarter of an ounce for 100 foot row of plants in the open garden. The beds are then watered thoroughly. Always water a hot-bed in the morning on a bright day—never water in the evening because it lowers the temperature at the most critical time of the day. A moist atmosphere at nights is sometimes harmful. It stimulates the development of disease and has a tendency to weaken young plants. Immediately after the plants show above ground it is very wise to cover the sash with cheesecloth, as the hot sun's rays often do great damage to young, tender plants. When the plants get about two to three inches high and begin to show two distinct leaves, it is then time for the first transplanting. At this stage of growth the wooden flats are used. The young plants are picked out of the hot-beds and transplanted in those flats, which are 18 by 12 x 3 inches at the distance of 12 in. apart each way. The young plants are handled in this way till they get larger and require more space, then it is advisable to transplant again either into field or into flats, giving double the space they had before. The cold frames are used for hardening off plants previous to planting in the permanent plot. A cold frame is a sash-covered frame without heat. The framework is made the same as a hot-bed. It is set down on earth surface, and banked around the sides with earth to keep out draughts. The sash-covering completes the cold frame bed. The flats which contain these advanced plants are placed in the cold frames, and carefully watered daily until they become hardy. When indications of sure frost have passed, these flats containing the vegetable plants are removed from cold frames and planted in the field.

THE GROWING OF RHUBARB

By W. A. Young

RHUBARB is an easily grown plant, quite hardy, and requires but a small amount of labor for its culture. This, together with the fact that it brings in returns at a time of the year when little else is being marketed, makes it very popular with vegetable growers. Men who handle this crop attempt to get it on the market as early as possible in order to get the attractive prices which prevail at the opening of the season.

Although rhubarb will grow luxuriantly on a variety of soils, for best results a rich sandy loam with plenty of depth is most suitable. A warm sandy loam on a southern slope is especially important where it is desired to supply an early market.

A plantation may be started from seed or by the division of old roots. It is by the latter method that the plants are propagated by commercial vegetable growers. When the roots are used they should be cut into pieces with a spade, each piece having at least one eye.

The roots may be planted in the spring or fall, but it is generally considered that the spring is the better time. The land should be thoroughly worked, and preferably fall plowed. It is customary to set the roots 3 x 4 or 4 x 4 feet apart, and to cover the crowns with several inches of soil. If the patch is large, it may be wise to plant in squares to allow for cultivation in both directions. This makes it much easier to keep a mulch on the ground and to control weeds.

Rhubarb is a Heavy Feeder

The rhubarb is a heavy feeder, and requires immense quantities of water to supply the large leaves and thick, fleshy stalks. The best way to retain the moisture in the soil for the use of the plants, is by means of a dust mulch, frequent and thorough, although not too deep, cultivation is therefore necessary throughout the entire growing season. If the plantation is cultivated both ways with the horse cultivator, the amount of hoeing required will be very small. The flower stalks, which persist in coming up, should be cut or broken off, as they rob the plant of a great deal of vitality.

During the first season of the plant's growth, no stalks should be removed for market. The second year, a moderate amount may be picked, but at no time should the patch be so badly robbed as to materially weaken the roots. The greatest profits cannot be made if the patch is left more than five years. The roots become too large and should be dug up and divided.

Large quantities of barnyard manure and commercial fertilizers must be applied in order to get the best possible results with this crop. A good commercial fertilizer should be worked into the soil with the first cultivation in spring. Nitrate of soda, applied in small quantities at intervals throughout the season, is very beneficial. When the season for rhubarb is over, which is usually sometime in June, barnyard manure is spread over the plantation at the rate of 25 tons or more per acre.

Indoor Culture

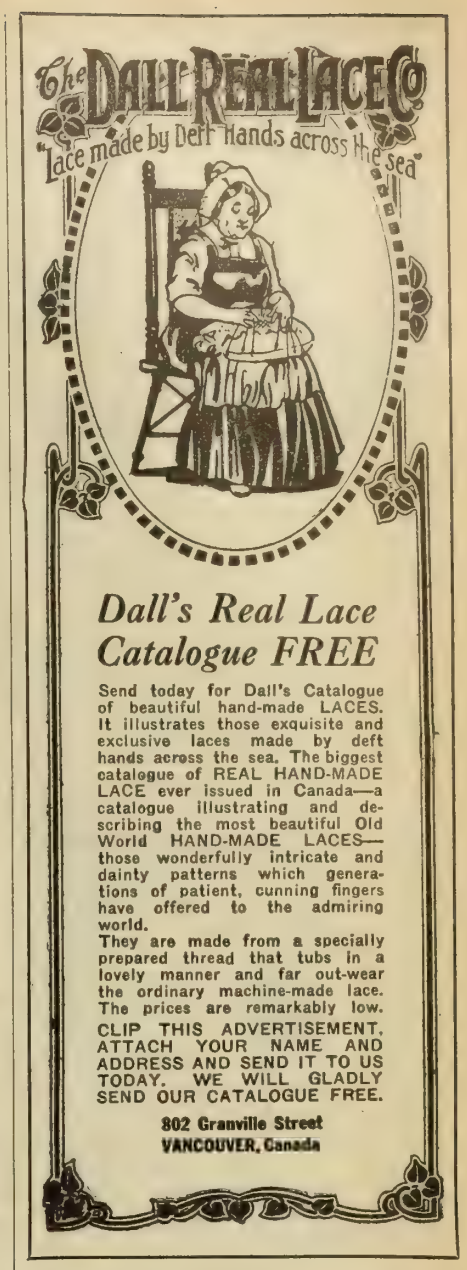
The forcing of rhubarb indoors is an important business with many vegetable growers near the larger markets. It is grown quite extensively under the benches of greenhouses, in cellars, and in cheap buildings specially constructed for this purpose.

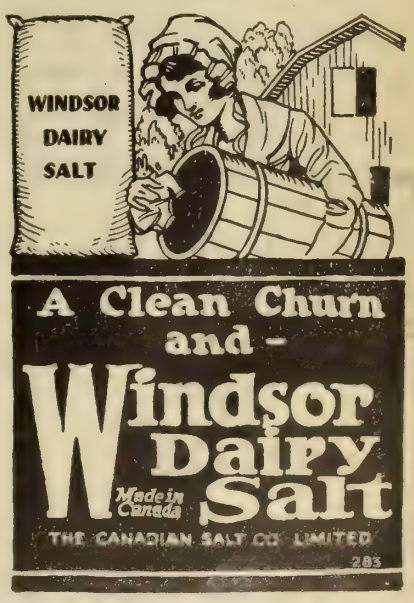
In selecting roots for forcing, choose those of a variety which grow green stalks under ordinary outdoor conditions. It is found that the red varieties, when grown inside, produce stalks which lack color, while the green varieties are a very attractive light red and pink. The roots should be dug in the fall before the ground freezes up, from a patch two or three years old. It is best to leave them cut for a short time after being dug, to be frozen. They should then be stored in a shed or cellar, covered with soil, to retain their moisture, and kept at a rather low temperature, until it is time to begin forcing.

The planting should be done about a month before the time it is desired to market the first crop. The roots are planted in five or six inches of good, rich soil, and the crowns covered to a depth of one or two inches. Eighteen to twenty-four inches is a good distance between the rows and the roots may be placed as close as they will go in the rows. The bed must then be watered sufficiently to moisten the soil to its full depth, and should be kept well supplied with water throughout the forcing period.

Temperature and light are important factors. The best results are obtained when the temperature is kept at about 45 degrees during the early period of growth. When the stalks have made a good start, the temperature should be raised to about 60 degrees. Semi-darkness, but not total darkness, is required in the forcing of this crop, and it is important that the small amount of light allowed be evenly distributed. The stalks tend to bend toward the place where the light is strongest. Insufficient light tends to produce a class of rhubarb that is pale in color and with inadequate leaf development. If the light is properly regulated straight stalks of a beautiful color will be produced.

A plowing scene in Ontario. Next year's annual plowing match is to be held at Chatham and a big time is looked for, says J. Lockie Wilson.





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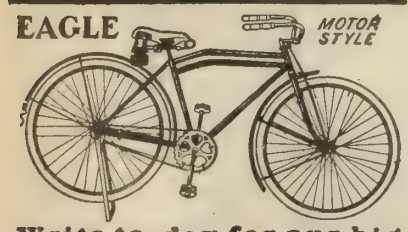

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

Lin Slone, a wild horse hunter, trails a magnificent, wild, red stallion—which he names Wildfire—for several months; from the Utah ranges across the Grand Canon of the Colorado. At last, when almost starving, he succeeds in roping the horse, but is thrown and hurt.

On the south side of the Grand Canon is a settlement called Bostil's Ford. Bostil os a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. He is very jealous of Creech, another rancher, who also owns same splendid horses. The annual races are soon to take place and Bostil fears his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. It is now May, and Creech has sent several urgent messages for the boat; Bostil, however, still delays. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has frequently sworn revenge. Cordts, a horse-thief, has also threatened to carry her off.

One afternoon Lucy, out on Sage King, rides far into the desert, where she finds Slone lying helpless. She renders him assistance and waters and secures the two horses. He tells her his adventures, but, ashamed of his ragged appearance, begs her to say nothing about him at the Ford. She agrees and rides away, promising to return the next day with food.

CHAPTER IX

LUCY BOSTIL could not control the glow of strange excitement under which she labored, but she could put her mind on the riding of Sage King. She did not realize, however, that she was riding him under the stress and spell of that excitement.

She had headed out to make a short cut, fairly sure of her direction, yet she was not unaware of the fact that she would be lost till she ran across her trail. That might be easy to miss and time was flying. She put the King to a brisk trot, winding through the aisles of the sage.

Soon she had left the monument region and was down on the valley floor again. From time to time she conquered a desire to look back. Presently she was surprised and very glad to ride into a trail where she saw the tracks she had made coming out. With much relief she turned Sage King into this trail, and then any anxiety she had felt left her entirely. But that did not mitigate her excitement. She eased the King into a long, swinging lope. And as he warmed to the work she was aroused also. It was hard to hold him in, once he got out of a trot, and after miles and miles of this, when she thought best to slow down he nearly pulled her arms off. Still she finally got him in hand. Then followed miles of soft and rough going, which seemed long and tedious. Beyond that was the home stretch up the valley, whose gradual slope could be seen only at a distance. Here was a straight, broad trail, not too soft nor too hard, and for all the years she could remember riders had tried out and trained their favorites on that course.

Lucy reached down to assure herself that the cinch was tight, then she pulled her sombrero down hard, slackened the bridle, and let the King go. He simply broke his gait, he was so surprised. Lucy saw him trying to look back at her, as if he could not realize that this young woman rider had given him a free rein. Perhaps one reason he disliked her had been always and everlastingly that tight rein. Like the wary horse he was he took to a canter, to try out what his new freedom meant.

"Say, what's the matter with you?" called Lucy, disdainfully. "Are you lazy? Or don't you believe I can ride you?"

Whereupon she dug him with her spurs. Sage King snorted. His action shifted marvelously. Thunder rolled from under his hoofs. And he broke out of that clattering roar into his fleet stride, where his hoof-beats were swift, regular, rhythmic.

Lucy rode him with teeth and fists clenched, bending low. After all, she thought, it was no trick to ride him. In that gait he was dangerous, for a fall meant death; but he ran so smoothly that riding him was easy and certainly glorious. He went so fast that the wind blinded her. The trail was only a white streak in blurred gray. She could not get her breath; the wind seemed to whip the air away from her. And then she felt the lessening of the tremendous pace. Sage King had run himself out and the miles were behind her. Gradually her sight became clear, and as the hot and wet horse slowed down, satisfied with his wild run, Lucy realized that she was up on the slope only a few miles from home. Suddenly she thought she saw something dark stir behind a sagebush just ahead. Before she could move a hand at the bridle Sage King leaped with a frantic snort. It was a swerving, nimble, tremendous bound. He went high. Lucy was unseated, but somehow clung on, and came down with him, finding the saddle. And it seemed, while in the air, she saw a long, snaky, whipping loop of rope shoot out and close just where Sage King's legs had been.

She screamed. The horse broke and ran. Lucy, righting herself, looked back to see Joel Creech holding a limp lasso. He had tried to rope the King.

The blood of her father was aroused in Lucy. She thought of the horse—not herself. If the King had not been so keen-sighted, so swift, he would have gone down with a broken leg. Lucy never in her life had been so furious.

Joel shook his fist at her and yelled, "I'd 'a' got you—on any other hoss!"

She did not reply, though she had to fight herself to keep from pulling her gun and shooting at him. She guided the running horse back into the trail, rapidly leaving Creech out of sight.

"He's gone crazy, that's sure," said Lucy. "And he means me harm!"

She ran the King clear up to the corrals, and he was still going hard when she turned down the lane to the barns. Then she pulled him in.

Farlane was there to meet her. She saw no other riders and was glad.

"Wal, Miss Lucy, the King sure looks good," said Farlane, as she jumped off and flung him the bridle. "He's just had about right, judgin' . . . . . Say, girl, you're all pale! Oh, say, you wasn't scared of the King, now?"

"No," replied Lucy, panting.

"Wal, what's up, then?" The rider spoke in an entirely different voice, and into his clear, hazel eyes a little dark gleam shot.

"Joel Creech waylaid me out in the sage—and—and tried to catch me," Lucy checked herself. It might not do to tell how Joel had tried to catch her.

"He did? An' you on the King!" Farlane laughed, as if relieved. "Wal, he's tried thet before, Miss Lucy. But when you was up on the gray—thet shows Joel's crazy, sure."

"He sure is. Farlane, I—I am mad!"

"Wal, cool off, Miss Lucy. It aint nothin' to git set up about. An' don't tell the old man."

"Why not?" demanded Lucy.

"Wal, because he's in a queer sort of bad mood lately. It wouldn't be safe. He hates them Creeches. So don't tell him."

"All right, Farlane, I won't. Don't you tell, either," replied Lucy, soberly.

"Sure I'll keep mum. But if Joel doesn't watch out I'll put a crimp in him myself."

Lucy hurried away down the lane and entered the house without meeting any one. In her room she changed her clothes and lay down to rest and think.

Strangely enough, Lucy might never have encountered Joel Creech out in the sage, for all the thought she gave him. Her mind was busy with the crippled rider. Who was he? Where was he from? What strange passion he had shown over the recovery of that wonderful red horse! Lucy could not forget the feeling of his iron arm when he held her in a kind of frenzied gratitude. A wild upland rider, living only for a wild horse! How like Indians some of these riders! Yet this fellow had seemed different from most of the uncouth riders she had known. He spoke better. He appeared to have had some little schooling. Lucy did not realize that she was interested in him. She thought she was sorry for him and interested in the stallion. She began to compare Wildfire with Sage King, and if she remembered rightly Wildfire, even in his disheveled state, had appeared a worthy rival of the King. What would Bostil say at sight of that flame-colored stallion? Lucy thrilled.

Later she left her room to see if the hour was opportune for her plan to make up a pack of supplies for the rider. Her aunt was busy in the kitchen, and Bostil had not come in. Lucy took advantage of the moment to tie up a pack and carry it to her room. Somehow the task pleased her. She recalled the lean face of the rider. And that recalled his ragged appearance. Why not pack up an outfit of clothes? Bostil had a stock-room full of such accessories for his men. Then Lucy, glowing with the thought, hurried to Bostil's stock-room, and with deft hands and swift judgment selected an outfit for the rider, even down to a comb and razor. All this she carried quickly to her room, where in her thoughtfulness she added a bit of glass from a broken mirror, and soap and a towel. Then she tied up a second pack.

Bostil did not come home to supper, a circumstance that made Lucy's aunt cross. They ate alone, and, waiting awhile, were rather late in clearing away the table. After this Lucy had her chance in the dusk of early evening, and she carried both packs way out into the sage and left them near the trail.

"Hope a coyote doesn't come along," she said. That possibility, however, did not worry her as much as getting those packs up on the King. How in the world would she ever do it?

She hurried back to the house, stealthily keeping to the shadow of the cottonwoods, for she would have faced an embarrassing situation if she had met her father, even had he been in a good humor. And she reached the sitting-room unobserved. The lamps had been lighted and a log blazed on the hearth. She was reading when Bostil entered.

"Hello, Lucy!" he said.

He looked tired, and Lucy knew he had been drinking, because when he had been he never offered to kiss her. The strange, sombre shade was still on his face, but it brightened somewhat at sight of her. Lucy greeted him as always.

"Farlane tells me you handled the King great—better'n Van has worked him lately," said Bostil. "But don't tell him I told you."

That was sweet praise from Farlane. "Oh, Dad, it could hardly be true," expostulated Lucy. "Both you and Farlane are a little sore at Van now."

"I'm a lot sore," replied Bostil, gruffly.

"Anyway, how did Farlane know how I handled Sage King?" queried Lucy.

"Wal, every hair on a hoss talks to Farlane, so Holley says. . . . Lucy, you take the King out every day for a while. Ride him now an' watch out! Joel

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Over five years ago Vilhjalmur Stefansson, the famous Arctic explorer, was commissioned by the Canadian Government to lead a party into the uncharted space that extended from the north-westerly boundaries of Canada on to the North Pole. Shortly after the party got away the news came back to civilization that Stefansson and some of his party had drifted out into the Arctic seas on an island of ice and they were given up as lost. But Stefansson came back, safe and sound, after four years of amazing adventures, during the course of which he made many discoveries of scientific and geographical value. Mr. Stefansson has written his story of this wonderful journey, and exclusive Canadian rights have been purchased by MACLEAN'S MAGAZINE. It starts in the April issue and will continue for six months. It is a thrilling narrative—unquestionably the most important Canadian story of the year.

Other Outstanding Features of April MacLean's

"Imperial Relations Must be Worked Out," by Viscount Bryce. An important announcement on the future construction of the British Empire.

"Reconstruction in Turkey," by Stephen Leacock. A humorous article on the present condition of things in Turkey as seen by Canada's great humorist, and applied to Canadian conditions.

"Bulldog Carney," by W. A. Fraser. A splendid novelette of the Canadian West, complete in this issue. Illustrated by Charles L. Wrenn.

"Opening the New Book," by J. K. Munro. An article on the situation at Ottawa created by the new Liberal leadership—smashing, impartial, fearless.

"The Sun Gazer," by Charles G. D. Roberts. A remarkable animal story. Illustrated by Arthur Heming.

"Canada's Fishmonger General," by Thomas M. Fraser. An article on a young Canadian who put Canadian fish on the diet of the British armies by a series of Barnum and Bailey advertising stunts.

"Bombing the Boche," by Lieut. J. Vernon Mackenzie. The second of the two articles that Mr. Mackenzie has written on the whirlwind campaign of raid reprisals which so frightened all Germany.

"The Transformation," by Frederic S. Isham. Illustrated by Hanson Booth. The second instalment of this sparkling new serial.

"Man and Wife," by C. W. Stephens. Illustrated by R. M. Brinkerhoff. The first instalment of a three-part story of Canadian life by a new Canadian writer—a delightful love story with a background of business intrigue.

Is Prohibition Pendulum Swinging Back?

One of the outstanding features of MACLEAN'S each month is a digest of the opinions of the people of Canada as reflected in the press on the most vital topic of the moment. In the April issue appears a careful and comprehensive summary of published opinion on the prohibition question. Does the country want "bone dry" legislation? Is "moderate" temperance gaining favor? Are provincial referendums favored? These questions are answered by a fair analysis of newspaper comment.

For Young Canadians

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The Review of Reviews

The best articles from all publications the world over are selected and condensed for this department. Some of the articles in the April number are:

The Man Behind Bolshevism.
Could German Fleet have been Destroyed?
The Secret Plans of the Allied Command.
Too Much Wilson.
Is the ex-Kaiser Haunted?
Next Government Will be Labor.
New Life of Deposed Princess.
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F.M.

Business Ideas in Financing Stock Raising

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Helping the Farmer to Information

"Now as the stock-raising is to be put on the plan with other business, then the farmers should be helped to get all the information that they can and the bankers ought to be able to help them. The stock-raiser in this year, 1919, must make his enterprise pay. A good many farmers have, in recent years, been milking cows that did not fully pay for their labor. Also, on account of high prices of feed and the advent of the gas machinery the farmers can only afford to raise the very best horses.

"There has been considerable speculation as to the future course of livestock values but at present the predicted shortage of livestock in consequence of the war period drain is materializing."

The above is just a portion of an article in THE FINANCIAL POST dated April 12th, 1919. The whole article, as you can readily see, has a great interest for the farmer who is farming for profit. Every week THE FINANCIAL POST comes before you with a message of profit-making interest. Its editorial contents each week cover the Canadian business field comprehensively and constructively. To read THE POST every week understandingly is to develop a breadth of business knowledge which has a cash value to farmers as well as to the business men whose success depends so greatly on the business success of Canadian farming. Read over this outline of some contents of the special insurance issue of

The Financial Post (Dated April 12, 1919)

Realize the business value of being able to talk and act with sure knowledge of these matters in your dealings with other business men.

Crerar Planning to Step Down
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Putting it up to the Loan Companies
Millers Seek Assistance of Government
People Must Discharge the Debt of the Nation
Railroads for Tariff Commission
Purchasers of Manitoba Bonds are Disclosed
Moose Jaw Had Surplus from 1916 Operations
Enormous Expansion in Fire Insurance
Marked Growth of Automobile Insurance
More Demand for Mortgage Loans is Taking Place
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The above are only a few of the many subjects of real profit-making interest to business-like farmers which have been dealt with by expert writers and editors in THE POST recently. THE POST will keep you informed on Canadian business matters in a way unrivalled by any other publication. Send for a subscription to-day. The price is $3.00 per year, and you have only to fill in this form.

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F.M.-May

Creech was in the village to-day. He sure sneaked when he seen me. He's up to some mischief."

Lucy did not want to lie and she did not know what to say. Presently Bostil bade her good night. Lucy endeavored to read, but her mind continually wandered back to the adventure of the day.

Next morning she had difficulty in concealing her impatience, but luck favored her. Bostil was not in evidence, and Farlane, for once, could spare no more time than it took to saddle Sage King. Lucy rode out into the sage, pretty sure that no one watched her.

She had hidden the packs near the tallest bunch of greasewood along the trail; and when she halted behind it she had no fear of being seen from the corrals. She got the packs. The light one was not hard to tie back on the saddle, but the large one was a very different matter. She decided to carry it in front. There was a good-sized rock near, upon which she stepped, leading Sage King alongside; and after an exceedingly trying moment she got up, holding the pack. For a wonder Sage King behaved well.

Then she started off, holding the pack across her lap, and she tried the King's several gaits to see which one would lend itself more comfortably to the task before her. The trouble was that Sage King had no slow gait, even his walk was fast. And Lucy was compelled to hold him into that. She wanted to hurry, but that seemed out of the question. She tried to keep from gazing out toward the monuments, because they were so far away.

How would she find the crippled rider? It flashed into her mind that she might find him dead, and this seemed horrible. But her common sense persuaded her that she would find him alive and better. The pack was hard to hold, and Sage King fretted at the monotonous walk. The hours dragged. The sun grew hot. And it was noon, almost, when she reached the point where she cut off the trail to the left. Thereafter, with the monuments standing ever higher, and the distance perceptibly lessening, the minutes passed less tediously.

At length she reached the zone of lofty rocks, and found them different, how, she could not tell. She rode down among them, and was glad when she saw the huge mittens—her landmarks. At last she espied the green-bordered wash and the few cedar trees. Then a horse blazed red against the sage and another shone black. That sight made Lucy thrill. She rode on, eager now, but moved by the strangeness of the experience.

Before she got quite close to the cedars she saw a man. He took a few slow steps out of the shade. His back was bent. Lucy recognized the rider, and in her gladness to see him on his feet she cried out. Then, when Sage King reached the spot, Lucy rolled the pack off to the ground.

"Oh, that was a job!" she cried.

The rider looked up with eyes that seemed keener, less staring than she remembered. "You came? . . . I was afraid you wouldn't," he said.

"Sure I came. . . You're better—not badly hurt?" she said, gravely. "I—I'm so glad."

"I've got a crimp in my back, that's all."

Lucy was quick to see that after the first glance at her he was all eyes for Sage King. She laughed. How like a rider! She watched him, knowing that presently he would realize what a horse she was riding. She slipped off and threw the bridle, and then, swiftly untying the second pack, she laid it down.

The rider, with slow, painful steps and bent back, approached Sage King and put a lean, strong, brown hand on him, and touched him as if he wished to feel if he were real. Then he whistled softly. When he turned to Lucy his eyes shone with a beautiful light.

"It's Sage King, Bostil's favorite," said Lucy.

"Sage King! . . . He looks it. . . But never a wild horse?"

"No."

"A fine horse," replied the rider. "Of course he can run?" This last held a note of a rider's jealousy.

Lucy laughed. "Run! . . The King is Bostil's favorite. He can run away from any horse in the uplands."

"I'll bet you Wildfire can beat him," replied the rider, with a dark glance.

"Come on!" cried Lucy, daringly.

Then the rider and girl looked more earnestly at each other. He smiled in a way that changed his face—brightened out the set hardness.

"I reckon I'll have to crawl," he said, ruefully. "But maybe I can ride in a few days—if you'll come back again."

His remark brought to Lucy the idea that of course she would hardly see this rider again after to-day. Even if he went to the Ford, which event was unlikely, he would not remain there long. The sensation of blankness puzzled her, and she felt an unfamiliar confusion.

"I—I've brought you—some things," she said, pointing to the larger pack.

"Grub, you mean?"

"No."

"That was all I asked you for, miss," he said, somewhat stiffly.

"Yes, but—I—I thought—" Lucy became unaccountably embarrassed. Suppose this strange rider would be offended. "Your clothes were—so torn. . . . And no wonder you were thrown—in those boots! . . . So I thought I'd—"

"You thought I needed clothes as bad as grub," he said, bitterly. "I reckon that's so."

His look, more than his tone, cut Lucy; and involuntarily she touched his arm. "Oh, you won't refuse to take them! Please don't!"

At her touch a warmth came into his face. "Take them? I should smile I will."

He tried to reach down to lift the pack, but as it was obviously painful for him to bend, Lucy intercepted him.

"But you've had no breakfast," she protested. "Why not eat before you open that pack?"

"Nope. I'm not hungry. . . Maybe I'll eat a little, after I dress up." He started to walk away, then turned. "Miss Bostil, have you been so good to every wanderin' rider you happened to run across?"

"Good!" she exclaimed, flushing. She dropped her eyes before his. "Nonsense . . . . Anyway, you're the first wandering rider I ever met—like this."

"Well, you're good," he replied, with emotion. Then he walked away with slow, stiff steps and disappeared behind the willows in the little hollow.

Lucy uncoiled the rope on her saddle and haltered Sage King on the best grass near at hand. Then she opened the pack of supplies, thinking the while that she must not tarry here long.

"But on the King I can run back like the wind," she mused.

The pack contained dried fruits and meat and staples, also an assortment of good things to eat that were of a perishable nature, already much the worse for the long ride. She spread all this out in the shade of a cedar. The utensils were few—two cups, two pans, and a tiny pot. She gathered wood, and arranged it for a fire, so that the rider could start it as soon as he came back. He seemed long in coming. Lucy waited, yet still he did not return. Finally she thought of the red stallion, and started off down the wash to take a look at him. He was grazing. He had lost some of the dirt and dust and the bedraggled appearance. When he caught sight of her he lifted his head high and whistled. How wild he looked! And his whistle was shrill, clear, strong. Both the other horses answered it. Lucy went on closer to Wildfire. She was fascinated now.

"If he doesn't know me!" she cried. Never had she been so pleased. She had expected every sign of savageness on his part, and certainly had not intended to go near him. But Wildfire did not show fear or hate in his recognition. Lucy went directly to him and got a hand on him. Wildfire reared a little and shook a little, but this disappeared presently under her touch. He held his head very high and watched her with wonderful eyes. Gradually she drew his head down. Standing before him, she carefully and slowly changed the set of the hackamore, which had made a welt on his nose. It seemed to have been her good fortune that every significant

move she had made around this stallion had been to mitigate his pain. Lucy believed he knew this as well as she knew it. Her theory, an often disputed one, was that horses were as intelligent as human beings and had just the same fears, likes, and dislikes. Lucy knew she was safe when she untied the lasso from the strong root where she had fastened it, and led the stallion down the wash to a pool of water. And she stood beside him with a hand on his shoulder while he bent his head to sniff at the water. He tasted it, plainly with disgust. It was stagnant water, full of vermin. But finally he drank. Lucy led him up the wash to another likely place, and tied him securely.

When she got back to the camp in the cedars the rider was there, on his knees, kindling the fire. His clean-shaved face and new apparel made him vastly different. He was young, and, had he not been so gaunt, he would have been fine-looking, Lucy thought.

"Wildfire remembered me," Lucy burst out. "He wasn't a bit scary. Let me handle him. Followed me to water."

"He's taken to you," replied the rider, seriously. "I've heard of the like, but not so quick. Was he in a bad fix when you got to him yesterday?"

Lucy explained briefly.

"Aha! . . . If that red devil has any love in him I'll never get it. I wish I could have done so much for him. But always when he sees me he'll remember."

Lucy saw that the rider was in difficulties. He could not bend his back, and evidently it pained him to try. His brow was moist.

"Let me do that," she said.

"Thanks. It took about all my strength to get into this new outfit," he said, relinquishing his place to Lucy.

When she looked up from her task, presently, he was sitting in the shade of the cedar, watching her. He had the expression of a man who hardly believed what he saw.

"Did you have any trouble gettin' away, without tellin'—about me?" he asked.

"No. But I sure had a job with those packs," she replied.

"You must be a wonder with a horse."

As far as vanity was concerned Lucy had only one weakness—and he had touched upon it.

"Well, Dad and Holley and Farlane argue much about me. Still, I guess they all agree I can ride."

"Holley an' Farlane are riders?" he questioned.

"Yes, Dad's right-hand men."

"Your dad hires many riders, I suppose?"

"Sure I never heard of him turning any rider down, at least not without a try."

"I wonder if he would give me a job?"

Lucy glanced up quickly. The idea surprised her—pleased her. "In a minute," she replied. "And he'd be grand to you. You see, he'd have an eye for Wildfire."

The rider nodded his head as if he understood how that would be.

"And of course you'd never sell nor trade Wildfire?" went on Lucy.

The rider's smile was sad, but it was conclusive.

"Then you'd better stay away from Bostil," returned Lucy, shortly.

He remained silent, and Lucy, busy about the campfire, did not speak again till the simple fare was ready. Then she spread a tarpaulin in the shade.

"I'm pretty hungry myself," she said. "But I don't suppose I know what hunger is."

"After a while a fellow loses the feelin' of hunger," he replied. "I reckon it 'll come back quick. . . . This all looks good."

So they began to eat. Lucy's excitement, her sense of the unreality of this adventure, in no wise impaired her appetite. She seemed acutely sensitive to the perceptions of the moment. The shade of the cedars was cool. And out on the desert she could see the dark smoky veils of heat lifting. The breeze carried a dry odor of sand and grass. She heard bees humming by. And all around the great isolated monuments stood up, red tops against the blue sky. It was a silent, dreaming, impressive place, where she felt unlike herself.

"I mustn't stay long," she said, suddenly remembering.

"Will you come back—again?" he asked.

The question startled Lucy. "Why—I—I don't know. . . . Won't you ride in to the Ford just as soon as you're able?"

"I reckon not."

"But it's the only place where there's people in hundreds of miles. Surely you won't try to go back—the way you came?"

"When Wildfire left that country I left it. We can't go back."

"Then you've no people—no one you care for?" she asked, in sweet seriousness.

"There's no one. I'm an orphan. My people were lost in an Indian massacre—with a wagon-train crossin' Wyomin'. A few escaped, an' I was one of the youngsters. I had a tough time, like a stray dog, till I grew up. An' then I took to the desert."

"O, I see. I—I'm sorry," replied Lucy. "But that's not very different from my dad's story, of his early years. . . What will you do now?"

"I'll stay here till my back straightens out. . . . Will you ride out again?"

"Yes," replied Lucy, without looking at him; and she wondered if it were really she who was speaking.

Then he asked her about the Ford, and Bostil, and the ranches and villages north, and the riders and horses. Lucy told him everything she knew and could think of, and, lastly, after waxing eloquent on the horses of the uplands, particularly Bostil's, she gave him a graphic account of Cordts and Dick Sears.

"Horse-thieves!" exclaimed the rider, darkly. There was a grimness as well as fear in his tone. "I've heard of Sears, but not Cordts. Where does this band hang out?"

"No one knows. Holley says they hide up in the canon country. None of the riders have ever tried to track them far. It would be useless. Holley says there are plateaus of rich grass and great forests. The Ute Indians say that much too. But we know little about the wild country."

"Aren't there any hunters at Bostil's Ford?"

"Wild-horse hunters, you mean?"

"No. Bear an' deer hunters."

"There's none. And I suppose that's why we're not familiar with the wild canon country. I'd like to ride in there sometime and camp. But our people don't go in for that. They love the open ranges. No one I know, except a half-witted boy, ever rode down among these monuments. And how wonderful a place! It can't be more than twenty miles from home. I must be going soon. I'm forgetting Sage King. Did I tell you I was training him for the races?"

"No, you didn't. What races? Tell me," he replied, with keen interest.

Then Lucy told him about the great passion of her father—about the long, time-honored custom of free-for-all races, and the great races that had been run in the past; about the Creeches and their swift horses; about the rivalry and speculation and betting; and lastly about the races to be run in a few weeks—races so wonderful in prospect that even the horse-thief, Cordts, had begged to be allowed to attend.

"I'm going to see the King beat Creech's roan," shouted the rider, with red in his sheeks and a flash in his eye.

His enthusiasm warmed Lucy's interest, yet it made her thoughtful. Ideas flashed into her mind. If the rider attended the races he would have that fleet stallion with him. He could not be separated from that horse that had cost him so dearly. What would Bostil and Holley and Farlane say at sight of Wildfire? Suppose Wildfire was to enter the races! It was probable that he could run away from the whole field—even beat the King. Lucy thrilled and thrilled. What a surprise it would be! She had the rider's true love of seeing the unheralded horse win over the favorite. She had for years wanted to see a horse—and ride a horse—out in front of Sage King. Then suddenly all these

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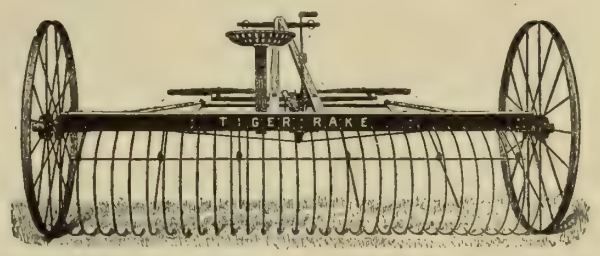

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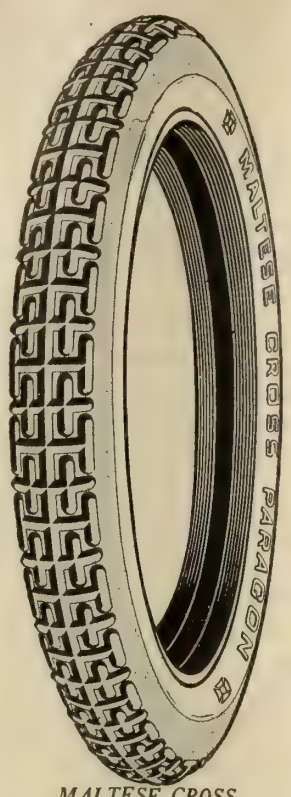

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flashing ideas coruscated seemingly into a gleam—a leaping, radiant, wonderful thought. Irresistibly it burst from her.

"Let ME ride your Wildfire in the great race!" she cried, breathlessly.

His response was instantaneous—a smile that was keen and sweet and strong, and a proffered hand. Impulsively Lucy clasped that hand with both hers.

"You don't mean it," she said. "Oh, it's what Aunty would call one of my wild dreams!...And I'm growing up—they say...But— Oh, if I could ride Wildfire against the field in that race ...If I only could!"

She was on fire with hope, flushing, tingling. She was unconscious of her effect upon the rider, who gazed at her with a new-born light in his eyes.

"You can ride him. I reckon I'd like to se that race just as much as Bostil or Cordts or any man...An' see here, girl, Wildfire can beat this gray racer of your father's."

"Oh!" cried Lucy.

"Wildfire can beat the King," repeated the rider, intensely. "The tame horse dosen't step on this earth that can run with Wildfire. He's a stallion. He has been a killer of horses. It's in him to kill. If he ran a race it would be that instinct in him."

"How can we plan it?" went on Lucy, impulsively. She had forgotten to withdraw her hands from his. "It must be a surprise—a complete surprise. If you came to the Ford we couldn't keep it secret. And Dad or Farlane would prevent me, somehow."

"It's easy. Ride out here as often as you can. Bring a light saddle an' let me put you up on Wildfire. You'll run him, train him, get him in shape. Then the day of the races or the night before I'll go in an' hide out in the sage till you come or send for Wildfire."

"Oh, it'll be glorious," she cried, with eyes like stars. "I know just where to have you hide. A pile of rocks near the racecourse. There's a spring and good grass. I could ride out to you just before the big race, and we'd come back, with me on Wildfire. The crowd always stays down at the end of the racecourse. Only the starters stay out there.....Oh, I can see Bostil when that red stallion runs into sight!"

"Well, is it settled?" queried the rider, strangely.

Lucy was startled into self-consciousness by his tone. How strangely he must have felt. And his eyes were piercing.

"You mean—that I ride Wildfire?" she replied, shyly. "Yes, if you'll let me."

"I'll be proud."

"You're very good.....And do you think Wildfire can beat the King?"

"I know it."

"How do you?"

"I've seen both horses."

"But it will be a grand race."

"I reckon so. It's likely to be the grandest ever seen. But Wildfire will win because he's run wild all his life—an' run to kill other horses....The only question is—can you ride him?"

"Yes. I never saw the horse I couldn't ride. Bostil says there are some I can't ride. Farlane says not. Only two horses have thrown me, the King and Sarchedon. But that was before they knew me. And I was sort of wild. I can make your Wildfire love me."

"That's the last part of it I'd ever doubt," replied the rider. "It's settled, then. I'll camp here. I'll be well in a few days. Then I'll take Wildfire in hand. You will ride out whenever you have a chance, without bein' seen. An' the two of us will train the stallion to upset that race."

"Yes—then—it's settled."

Lucy's gaze was impelled and held by the rider's. Why was he so pale? But then he had been injured—weakened. This compact between them had somehow changed their relation. She seemed to have known him long.

"What's your name?" she asked.

"Lin Slone," replied the rider.

Then she released her hands. "I must ride in now. If this isn't a dream I'll come back soon." She led Sage King to a rock and mounted him.

"It's good to see you up there," said Slone. "An' that splendid horse!.... He knows what he is. It'll break Bostil's heart to see that horse beat."

"Dad 'll feel bad, but it 'll do him good," replied Lucy.

That was the old rider's ruthless spirit speaking out of his daughter's lips.

Slone went close to the King and, putting a hand on the pommel, he looked up at Lucy. "Maybe—it is—a dream—an' you won't come back," he said, with unsteady voice.

"Then I'll come in dreams," she flashed. "Be careful of yourself.... Good-by."

And at a touch the impatient King was off. From far up the slope near a monument Lucy looked back. Slone was watching her. She waved a gauntleted hand—and then looked back no more.

CHAPTER X

TWO weeks slipped by on the wings of time and opportunity and achievement, all colored so wonderfully for Lucy, all spelling that adventure for which she had yearned.

Lucy was riding down into the sage toward the monuments with a whole day before her. Bostil kept more and more to himself, a circumstance that worried her, though she thought little about it. Van had taken up the training of the King; and Lucy had deliberately quarreled with him so that she would be free to ride where she listed. Farlane nagged her occasionally about her rides into the sage, insisting that she must not go so far and stay so long. And after Van's return to work he made her ride Sarchedon.

Things had happened at the Ford which would have concerned Lucy greatly had she not been over-excited about her own affairs. Some one had ambushed Bostil in the cottonwoods near his house and had shot at him, narrowly missing him. Bostil had sworn he recognized the shot as having come from a rifle, and that he knew to whom it belonged. The riders did not believe this, and said some boy, shooting at a rabbit or coyote, had been afraid to confess he had nearly hit Bostil. The riders all said Bostil was not wholly himself of late. The river was still low. The boat had not been repaired. And Creech's horses were still on the other side.

These things concerned Lucy, yet they only came and went swiftly through her mind. She was obsessed by things intimately concerning herself.

"Oh, I oughtn't to go," she said, aloud. But she did not even check Sarchedon's long swing, his rocking-chair-lope. She had said a hundred times that she ought not to go again out to the monuments. For Lin Slone had fallen despairingly, terribly in love with her.

It was not this, she averred, but the monuments and the beautiful Wildfire that had woven a spell round her she could not break. She had ridden Wildfire all through that strange region of monuments and now they claimed something of her. Just as wonderful was Wildfire's love for her. The great stallion hated Slone and loved Lucy. Of all the remarkable circumstances she had seen or heard about a horse, this fact was the most striking. She could do anything with him. All that savageness and wildness disappeared when she approached him. He came at her call. He whistled at sight of her. He sent out a ringing blast of disapproval when she rode away. Every day he tried to bite or kick Slone, but he was meek under Lucy's touch.

But this morning there came to Lucy the first vague doubt of herself. Once entering her mind, that doubt became clear. And then she vowed she liked Slone as she might a brother. And something within her accused her own

conviction. The conviction was her real self, and the accusation was some other girl lately born in her. Lucy did not like this new person. She was afraid of her. She would not think of her unless she had to.

"I never cared for him—that way," she said, aloud. "I don't—I couldn't—ever—l—l—love Lin Slone!"

The spoken thought—the sound of the words played havoc with Lucy's self-conscious calmness. She burned. She trembled. She was in a rage with herself. She spurred Sarchedon into a run and tore through the sage, down into the valley, running him harder than she should have run him. Then she checked him, and, penitent, petted him out of all proportion to her thoughtlessness. The violent exercise only heated her blood and, if anything, increased this sudden and new torment. Why had she discarded her boy's rider outfit and chaps for a riding-habit made by her aunt, and one she had scorned to wear? Some awful, accusing voice thundered in Lucy's burning ears that she had done this because she was ashamed to face Lin Slone any more in that costume—she wanted to appear different in his eyes, to look like a girl. If that shameful suspicion was a fact why was it—what did it mean? She could not tell, yet she was afraid of the truth.

All of a sudden Lin Slone stood out clearer in her mental vision—the finest type of a rider she had ever known—a strong, lithe, magnificent horseman, whose gentleness showed his love for horses, whose roughness showed his power—a strange, intense, lonely man in whom she had brought out pride, gratitude, kindness, passion, and despair. She felt her heart swell at the realization that she had changed him, made him kinder, made him divide his love as did her father, made him human, hopeful, longing for a future unfettered by the toils of desert allurement. She could not control her pride. She must like him very much. She confessed that, honestly, without a qualm. It was only bewildering moments of strange agitation and uncertainty that bothered her. She had refused to be concerned by them until they had finally impinged upon her peace of mind. Then they accused her; now she accused herself. She ought not to go to meet Lin Slone any more.

"But then—the race!" she murmured. "I couldn't give that up....And oh! I'm afraid the harm is done! What can I do?"

After the race—what then? To be sure, all of Bostil's Ford would know she had been meeting Slone out in the sage, training his horse. What would people say?

"Dad will simply be radiant, if he can buy Wildfire—and a fiend if he can't," she muttered.

Lucy saw that her own impulsiveness had amounted to daring. She had gone too far. She excused that—for she had a rider's blood—she was Bostil's girl. But she had, in her wildness and joy and spirit, spent many hours alone with a rider, to his undoing. She could not excuse that. She was ashamed. What would he say when she told him she could see him no more? The thought made her weak. He would accept and go his way—back to that lonely desert, with only a horse.

"Wildfire doesn't love him!" she said.

And the scarlet fired her neck and cheek and temple. That leap of blood seemed to release a riot of emotions. What had been a torment became a torture. She turned Sarchedon homeward, but scarcely had faced that way when she wheeled him again. She rode slowly and she rode swiftly. The former was hateful because it held her back—from what she no longer dared think; the latter was fearful because it hurried her on swiftly, irresistibly to her fate.

To be continued.

WHY WERE QUAKERS IMPRISONED?

The "Canadian Friend," published by the Friends of Canada, carries the following story in its last issue.

Some time ago I learned from an acquaintance that Geo. Mabley, a young Hicksite Friend belonging to Coldstream Meeting, had been sent down to Kingston Penitentiary for two years as a conscientious objector. At the first opportunity I applied for permission to visit him. This was readily granted by the Warden, though the rule regarding visitors is usually restricted to blood relatives only. However, no objection was made in this case, and on presenting myself at the Warden's office at the appointed hour I was turned over to a guard who was directed to take me to Mabley's cell. After the unlocking and locking of many doors and passing numerous guards, I at last found myself at the entrance of a cell in the Penitentiary Hospital where Geo. Mabley was confined, as he was just recovering from influenza. The guard placed a stool for me beside the cot in the bare cell and withdrew to the corridor, leaving me to chat freely with George Mabley. He had put in about eight months of his sentence he told me, but that the order for his release had just recently been sent to the Warden, and as soon as he was well enough to travel he would be allowed to go home. Dr. Zavitz, of Guelph, whom he knew personally, had been interested in securing his release. A friend of George Mabley named Toole, and also a member of Coldstream Meeting, had been sent to Burwash Prison about the same time, but had, he believed, received his release a short time before. Both of them he said had applied for permission to join a Friends Relief or Ambulance Corps, but they had been refused. It was his impression that he and Toole were the first two Friends of military age to be called up who had refused to don the uniform, and that as this was before the Government had decided on any definite policy regarding the treatment of Friends, they were, therefore, more severely dealt with. I asked him about his treatment and conditions generally, but he had not a word of complaint. During the fall it seems he was employed on the Penitentiary Farm. It was while cutting ice for the Penitentiary that he contracted the cold which developed into influenza. The general health of the penitentiary was good, for in one whole wing of cells in the hospital ward, his was the only one that was occupied at the time.

As I was leaving the ward, a massive grey limestone building with its barred windows and heavily locked doors, one of the guards enquired after Mabley. "A nice lad," he said, adding with rather a forcible expletive, "It's a —— shame to put a lad like that in here." I was thinking something the same myself, and also wondering whether we sufficiently honored those who had been willing to give up their personal freedom and liberty in order that the sacred principle of liberty of conscience might be vindicated. If, as we believe, many brave and true men have given their lives for the cause of democracy and political freedom, so do we also believe that the example and the personal sacrifice of at least two Canadian Friends for freedom of conscience and a testimony against war shall not have been in vain.

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A bar of yellow soap, laundry variety, is a mighty useful thing to have in the workshop, not so much for washing as for greasing screws and nails, says the "Country Gentleman." Cut a whole bar in two, put one piece in the box where you keep your wood screws and the other in your nail box. Draw the threads of a wood screw across the soap and you will find that it will drive very much easier, and after many days, it will come out very much easier also. The holding qualities will not be impaired. Especially is this treatment recommended in the case of brass screws, where it will prevent many twisted off and broken heads.

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Worthy of remembrance is the fact that this soap is not soluble in gasoline, and consequently is a fine thing to put on gasoline pipe connections to keep them from leaking. It may also be used to stop a leak in the gasoline tank if a wad of it is applied over the hole. The soap will not harden and drop off the way putty will. Of course this is intended only as a temporary repair.

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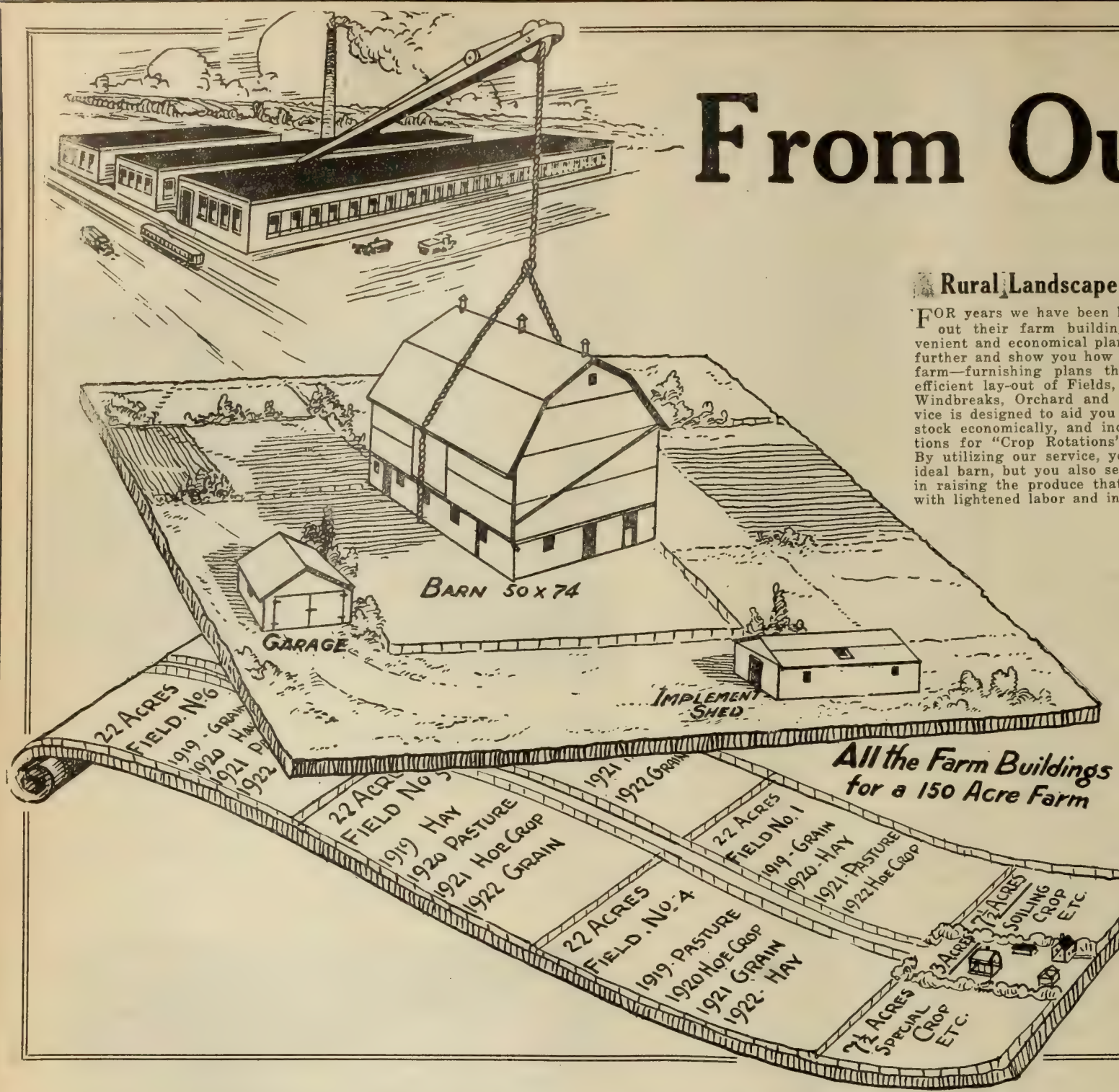

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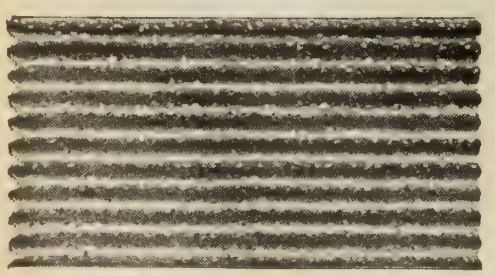

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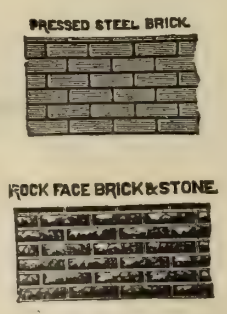

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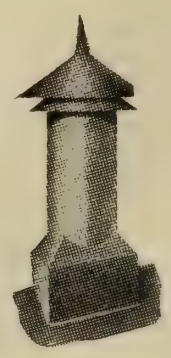

Ventilators

The "Acorn" Ventilator will draw off the foul air and keep the barn cool and sanitary.

Silo Roots

The saving in ensila soon pay for this si It is so constructed tha be erected in a few time.

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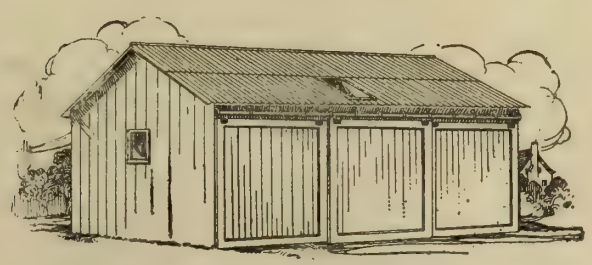

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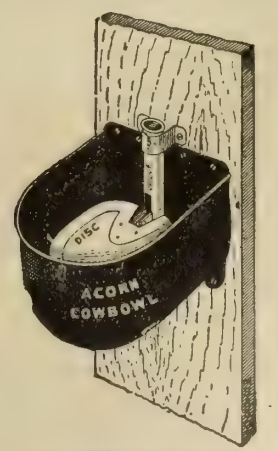

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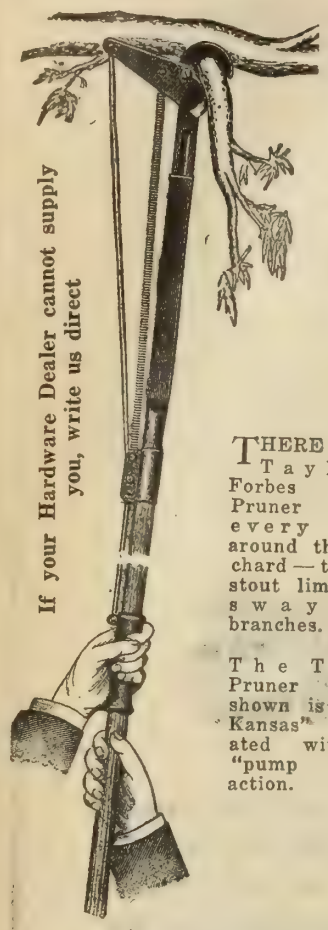

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BUILDING *and* CONSTRUCTION

Horse Barns and Buildings

From JOE WING'S BUILDING PLANS

ON the farm a general style and principle may be employed in building housing for horses and cattle. The ceaseless activity of the horse, young and old, must be reckoned with from first to last, and this necessitates a solidity of structure in detail which need not be observed in the erection of ordinary farm buildings.

A fairly large barn is desirable on account of the economy of construction involved. Box-stalls must be provided for stallions and for mares and foals. The walls of every box should be made so that they slope inward for the first four feet of their height, being at the ground point one foot inside the perpendicular of the wall. This prevents a horse from being cast or rubbing his tail or bruising his hocks. Doors from each box should open to the outside. This insures a ready egress for the animals in case of fire and an easy way to clean out the boxes day by day. Once the manure is thrown on the outside it may be drawn away and spread on the grasslands or fields at once and its utmost benefit secured to the farm. A gravel or stone road should be laid entirely around a stable with these outside doors. The inside space of a large barn must necessarily contain boxes which cannot open to the outside. These should communicate by large doors with broad alleyways.

Convenient space should be reserved on the ground floor for a feed-mixing room, and hay may be delivered to the manger in each box directly by chutes or to convenient spots in the alleyways. If each box is equipped with a chute a great waste of hay is almost certain, as the tendency will be to save time and work by filling the chute full and allowing the horse to stand to hay all the time. This is one of the most costly and most unnecessary wastes on the Canadian farm.

Loft-room should be very ample. To this end the open form of construction in the roof has been found to be the most satisfactory. Large bins for keeping grain and bran should also be provided as nearly rat-proof as possible and connected with the feed-room below by spouts. In the comb of the roof in large barns there should be a complete system of tracks for hay forks or slings, admitting of the filling of the loft from each end.

Partitions between box-stalls for the first five or six feet from the ground upward must be very strong and substantial. Above this, iron rods ½ in. thick or heavy wire netting should be used. Horses love company and if closely confined, but unable to see each other, they are likely to get restless and contract the bad habit of pawing. These iron rods should be set top and bottom in oak or other hardwood timber 2 in. x 4 in. in size, and the edges should always be rounded off with the plane. It seems likely that partions of concrete will come into great favor. For the mangers, iron is preferred by some and wood by others, but when wood is used it must be very hard wood. The constant biting and gnawing to which most wooden mangers are subjected, chiefly by colts, makes little impression on hard wood. Some prefer to leave nothing in the box at all on which the horse may fix his teeth. A portable feed-box, placed inside the door and removed when the feed is finished, and hay fed on the floor are preferred by many of the best breeders and horsemen of the day, but

The circular barn is not common in Canada, although it has many good features and arguments in its favor. This one is 102 feet in diameter. It is designed to accommodate the feed and stock to be produced on a farm of 250 acres. The mow floor has a capacity of 350 to 400 tons. The haying outfit consists in a circular track suspended about half way up the span of the roof. The roof is entirely self-supported.

the feeding of long hay on the floor is wasteful. It is better to provide a manger bound with tin or sheet iron to prevent gnawing. The best flooring for the boxes is a hard clay.

Good Light and Air

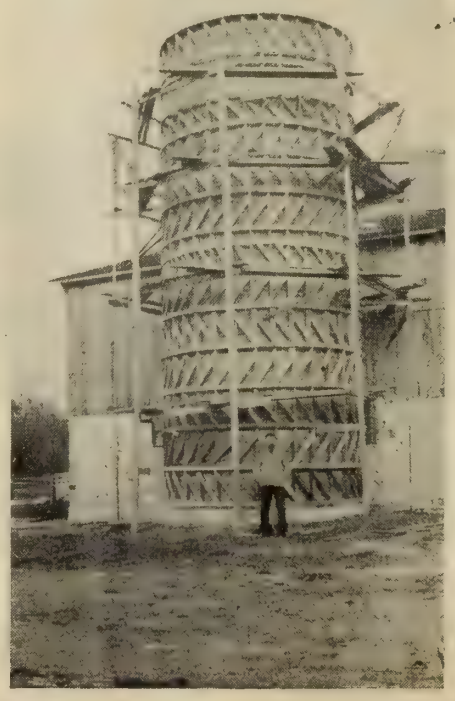
Light and air are essential in all horse barns. Windows should be easily opened and each one should be fitted with a wire screen, so that in summer the flies may be kept out. Doors to the outside should be in two parts, the lower half about 5 ft. high and the upper smaller, its place to be taken in hot weather by strong wire screened netting. This must be protected by a frame work of hardwood bars. With windows and doors thus opened and screened the horses will be cool and comfortable as possible in hot weather. Electrically driven fans, of course, may be installed, but they are not common.

If the design is to build a barn which may be used partially for breeding horses and also for driving horses, a series of standing stalls should be arranged. These may be floored with pine or other planks for two-thirds of their length, allowing the fore feet to rest on a clay floor. A well-built harness-room fitted with cases in which the leather goods may be shut up air-tight if desired. The ammonia arising from the stables where horses are kept is very destructive, both to leather and the varnish on carriages. For this reason the carriage-house should be shut off from the section in which the horses are kept. Glass doors should be used in the harness cases in order that the condition of the leather may be readily noted.

Ventilation

Ventilation is one of the essentials in a stable. There must be air shafts from the lower story leading to slatted cupolas on the roof. If a reasonable amount of attention is paid to the location of the windows and doors there need not be any trouble as to the supply of necessary fresh air, but ample shafts to carry off the heated foul air must be provided. Generally, it is well to devote barns to one distinct use or very satisfactory composite structures may be built. If there are several stallions, usually the most valuable animals on the farm to be cared for, it is best to give them a stable to themselves, and in such a case, more than in any other, doors should open to the outside. Fire is an ever-present possibility, and the horse is the most stupid of all the domestic animals when fire is to be fought. The utmost celerity of action is necessary, and any plan of construction which does not coincide with that is faulty.

The method of watering is rather unimportant, so long as the water is pure. Perhaps as good a way as any to water horses is the old-fashioned one of carrying it to them in buckets. A hydrant in the barn or a convenient pump are preferred by many owners to a system of water troughs in stalls, which must be cleaned daily or become foul from dropping of feed in them. A watering trough of cement, galvanized iron or wood, conveniently placed in the stable yard or inside the stable, is perhaps as economical of time and labor as the individual troughs in each stall, when the trouble of keeping the latter clean is considered. Fresh cool water in the summer and tempered water in the winter add much to the comfort and thrift of the horse. Water fresh from a well or hydrant meets both conditions. When horses are watered from an outside trough in winter a tank heater is necessary to keep it free from ice. In all cases the water should be close at hand.



E. A. Lett's cement plastered silo, to have sheeting on the outside. It is situated on Barrie Island, Ontario.

MILKING SHORTHORNS SELL WELL

By W. P. Graham

Mrs. S. A. Moore's sale of milking Shorthorn cattle at Burnfoot farm, Caledonia, shows that this fine type of cattle are very popular. The cows sold from $445 to $1,000 and two months' old calves went to $250. The twelve-year-old cow, Burnfoot Lady, brought $550. Alexandra calved in 1913 with an R. O. P. milk record of 8,147 lbs., testing 4.08 as a two-year-old sold for $1,000. The herd bull six years old brought $440. This old Shorthorn breed is all right and will yet be as popular in Ontario as they are in England.

THE FORTNIGHT IN THE COMMONS

Continued from page 18

sailors who pursue that course—he failed in business. He gave up all he had to his creditors, but it was not enough; so he went back to the sea again to earn the money to discharge all his debts in full. His downright way of stating his opinions and convictions; his homely similes, and the humorous way in which he blurted out things which more diplomatic parliamentarians would express more diplomatically, always assured him of an audience in the House, which, perhaps "could have been better spared a better (in the sense of a more important) man."

The case of the Guelph Novitiate, which occupied an afternoon of the time of the House and fifty pages of Hansard, showed, if nothing else, how quickly the House divides on a question of religion. The facts of the case are still probably fresh in the minds of readers of this magazine. The Novitiate is a farm conducted by the Jesuit order, about two miles from Guelph, and at the instance of the Protestant Ministerial Association of that city a night raid was made on it last June for possible evaders of the Military Service Act. The raid was called off at the instance of the Minister of Justice, Hon. Mr. Doherty, who had a son at the institution. This is no place to discuss the rights or wrongs of the incident, because the Government has granted a Royal Commission to investigate the whole matter, when the facts will no doubt come out. But when it was brought up in the House it was responsible for a good deal of partisan bitterness and argument based on sentiment rather than logic. There are some members in the House more renowned for their sectarianism than their piety, and they were well to the fore.

GROVE ON FARM IS WORTH $1,000

SUCH is the finding of Mr. Justice Stuart of the Supreme Court of Alberta in the recently tried case in the Supreme Court here of Pawson vs. Tangye, says the *Lethbridge Herald.* The plaintiff was the owner of a farm at Coaldale upon which a grove of growing trees were situated; he rented it to the defendant, Tangye, and Tangye permitted stock to injure the trees. Judge Stuart in his decision found the defendant was liable in the sum of $1,000.

An interesting feature of this case was the endurance of Arch. Mitchell, who stated that while he was in the employ of the Dominion Government, inquiries were sent to each farmer who had planted trees under the supervision of the Dominion service asking what they considered the increased value of their farms were by reason of their groves and no farmer reported the value of his grove at less than $1,000, and many said more than that amount.

This should be interesting to our farmers in planting trees even from the strictly monetary value to the land.

ENSILAGE CROPS

IN deciding on the value of a crop for ensilage purposes, in Manitoba at least, four factors must be taken into consideration: first, the yield per acre; second, the succulence; third, the palatability; and fourth, the flavor. This last is of importance in the effect that it may have on the milk of the dairy cows. In yield per acre the seven crops under test ranged themselves from highest to lowest as follows: Rape, corn, millet, buckwheat, oats and peas, Sudan grass and alfalfa. In palatability: Sudan grass, alfalfa, corn, oats and peas, millet, rape and buckwheat. In succulence: Rape, corn, buckwheat, oats and peas, mullet, Sudan grass and alfalfa. In flavor there would not seem to be much difference between corn, Sudan grass, millet, oats and peas, and alfalfa. The rape and buckwheat, however, were inferior in flavor. Considering all factors, corn and oats and peas would come in the first class; Sudan grass and millet in the second; alfalfa in the third; and rape and buckwheat in the fourth. There are two crops not mentioned in the list on which a small amount of work has been conducted which seems to indicate that they might be of value, namely, sweet clover and sunflower.

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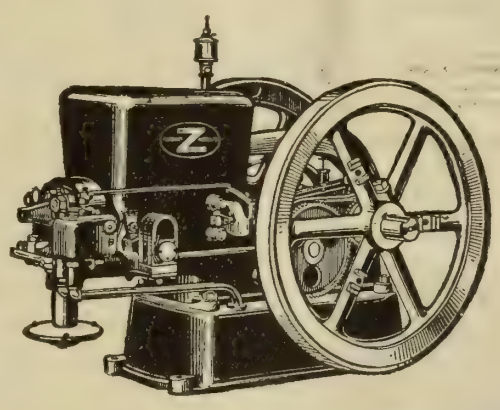

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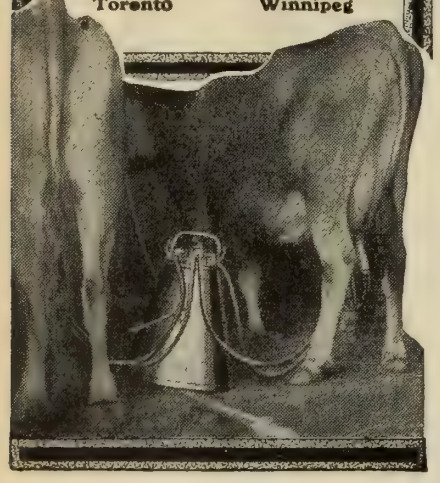

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Planning the Farm and the Building

Continued from page 13

The permanent fences are few, which is desirable for at least two reasons—economy in materials and economy of space. Moreover, this means fewer fence bottoms to keep clean. Again referring to the drawing, we find a pair of large permanent concrete posts at both ends of the three large fields. These are to be used as anchor posts for a temporary fence which divides the field when used for pasture and hoe crop—every third year. The fence is carried upon steel fence posts which allow of the whole thing being easily removed, rolled up and taken to the next field, where it is as quickly set up. Furthermore, the one fence answers for all three fields.

The farm lane runs back along the west line, accordingly only one fence is required here. A second lane branches off to the east, just north of the barns and gives access to a number of small field divisions used in connection with soil crops, pig pastures, etc. The main lane also extends past the house and opens to the public road. This arrangement of lanes, fences and fields is the most economical for a farm of this size and shape—economical in use of materials and of time when working the farm.

Having planned and fenced the farm, it is now ready for the crop, but before doing any work, a proper crop rotation must be worked out. This must suit modern dairy farm conditions and be adapted to a farm of this size. A short crop rotation is desirable for a number of reasons, the principal of these being that the cold Canadian winters kill out the grass roots when the hay crop is continued for several years and in addition to this, it is desirable to have a hoe crop every third or fourth year to kill the weeds out.

The rotation we will use is first year grain, second year hay, third year pasture and hoe crop. It is during the third year that the temporary fence is used to divide the field into thirteen acres for pasture and twelve acres for hoe crop (corn and roots, care being taken to use the pasture portion for the hoe crop alternateiy every third year. This gives all the fields the same amount of cultivation and fertilizer or manure, so that with average weather conditions, an average crop may be looked for each year.

In making an estimate of this crop, it must be remembered that we are considering average conditions on a dairy farm and that hay and grain farms will produce more of these crops than a dairy farm. However, for the one hundred acre farm with rotation and layout as shown, the average crop production would be about as follows:

Hay, fifty tons,
Grain (Straw—about same bulk as hay, fifty tons; Grain—seven hundred and fifty bushels), Fodder corn (ten acres)—one hundred tons, Roots (two acres)—eight hundred bushels.

In addition to this, there are the soiling crops, etc., at the front, but these will be fed during the summer, so need not be considered here.

The barn for a farm like this must have a capacity of at least one hundred tons, or from fifty thousand to fifty-five thousand cubic feet of space inside. One of the modern open centre, gambrel roof barns, 36 ft. x 70 ft. x 16 ft. wall, will give this space as the following estimate shows:

Space in barn 36 ft. x 70 ft. x 16 ft. to wall level	40,320 cu. ft.
Space in barn above wall level, 30 ft. x 70 ft. x 13 ft.	22,300 cu. ft.
Total cu. ft.	62,620 cu. ft.
Deduct space for drive floor 14 ft. wide	14,340 cu. ft.
Total net storage space	52,280 cu. ft.

In addition to this, considerable settlement takes place in deep mows particularly where there are no cross timbers, so that this size of barn gives ample space for the crop we have estimated.

Having seven hundred and fifty bushels of grain to house, we must provide a granary to hold this and in addition, space for meal, etc., so that a total space 12 ft. x 28 ft. x 8 ft. will be about right. This must be arranged so as to be convenient to the thresher and also over the feed room in the basement.

The eight hundred bushels of roots will take a cellar 12 ft. x 12 ft. x 8 ft. which can be built under the approach to the barn, where, besides being convenient, the proper temperature may be had at which to keep roots without fear of decaying.

A silo to hold one hundred tons of ensilage should be 12 ft. diameter and 36 ft. high and although one 14 ft. x 30 ft. would hold the same amount, nevertheless, the narrow high silo is to be preferred to the broader low one. In a narrow silo more depth of ensilage is removed at each feeding, but not so much surface is uncovered and left exposed until next feeding time, consequently more good fodder is taken from the smaller silo.

In conducting modern farming operations, a great many expensive implements are used and some sort of convenient fireproof shelter must be provided. If the implement shed is not convenient, it will not be used and the machinery will stand outside until the summer work is all done before time is found to store it away. Few farmers realize just what a loss it means to leave an implement out even for a day or so. Here are some data along these lines:

- A farm wagon will last fourteen years longer if housed than if exposed.
- A cultivator will last five years longer if housed than if exposed.
- A binder will last ten years longer if housed than if exposed.
- A mower will last six years longer if housed than if exposed.
- A manure spreader will last six years longer if housed than if exposed.
- A plow will last five years longer if housed than if exposed.

This was compiled by reliable authorities and simply shows us that it does not pay to leave machinery lying around. A house 20 ft. x 48 ft. will hold all the implements used on this farm and if the doors are arranged all along one side, it will be used continually.

Having housed all the crops and the machinery, we must now give attention to the stock and in order to make this simple and clear, a plan of a very desirable stable is shown. This is 36 ft. x 70 ft. and just suits the barn that we found was required to house the crops. Fortunately an open centre barn with 16 ft. walls and gambrel roof holds just about sufficient fodder to feed the animals that can be housed in a stable under it. A certain ratio exists that does not vary provided the stock is not crowded and that the business is dairying. Note, also that the silo holds one hundred tons and that this will just carry twenty-two cows, (the number shown on the plan) through nicely, allowing a few tons for summer feeding before the soiling crop comes in.

We have arrived at the sizes of the various buildings, arranged a plan for the stabling of the stock and now find that next we must place these buildings so they will be convenient and comfortable. Considering the barn first, this should have the longest dimension running north and south because this allows the early morning and late afternoon sun to shine into the stable when it is needed most—at "chore-time." Another point in favor of this is that the hot sun in summer does not heat up the interior of a stable with this exposure because during the hottest part of the day the end of the barn only, is in the direct rays of the sun instead of the long side with many windows, as is the case when the barn has the longest dimension extending east and west.

The drawing shows the position of the building with relation to the lanes, yards and house, so little need be said here regarding this except that these positions seem to be the most desirable for a farm where the lane runs back along the west line. By reversing this plan, it can be made just as convenient for a farm where the lane is on the east side. In this case, of course, the windbreak would be planted west of the orchard. When the lane is back through the centre of the farm, the buildings may be arranged either to east or west of the lane, the former being the preferable position.

The farm home has not been noticed yet and while our problem has been more in the way of building up an efficient farm business, yet the home deserves some attention. This, as shown on the drawing, occupies a position about one hundred and fifty feet back from the public highway and has a good lawn at the front and on both sides. It is well shaded by the windbreak to the west and also by the one to the north, which also forms a desirable green background. Foundation planting will help the appearance a lot and bushes and flowers at the boundaries will add to the beauty. A shade tree or two to the southwest of the house, will help to keep it cool during the hot days. Notice how effectively the windbreaks and orchard screen the barnyard and at the same time allow these to be not far distant from the house. This combines utility, convenience and beauty and can be carried out at little cost—simply by giving some thought to the planning of the ground.

Step by step, each problem has been worked out in such a way as will enable the wide-awake, thinking farmer to apply these methods to his own problems. In addition to this, the illustrations show better than words can tell, how to make the farm plan, how to design a desirable stable and the photograph of a farm plant shows how one farmer is doing his best to have good farm buildings and an attractive farm home. Every cent spent on a farm that is being built up to a definite plan, will bring results. Every hour's work put in on that farm will carry the owner nearer to his goal. The results gained by such a procedure are many—too many to name here. One that we cannot pass without mentioning is the big step such a plan will be toward keeping the boys and girls on the farm. A comfortable home, pleasing, attractive, convenient, profitable and "homelike" is a lovable spot, deeply rooted in the affections of your children, a place they will never forget.

EELWORM IN WHEAT

THE eelworm disease of wheat, long known in Europe, has been found during the past year causing considerable damage in Virginia and in isolated localities in West Virginia, Maryland, Georgia, and California. Every effort should be made to control the trouble in these infested regions, to prevent its further spread, and to find other localities where the disease may exist.

A group of farm buildings that make a real farmstead

HANDLING VIRGIN PRAIRIE SOD

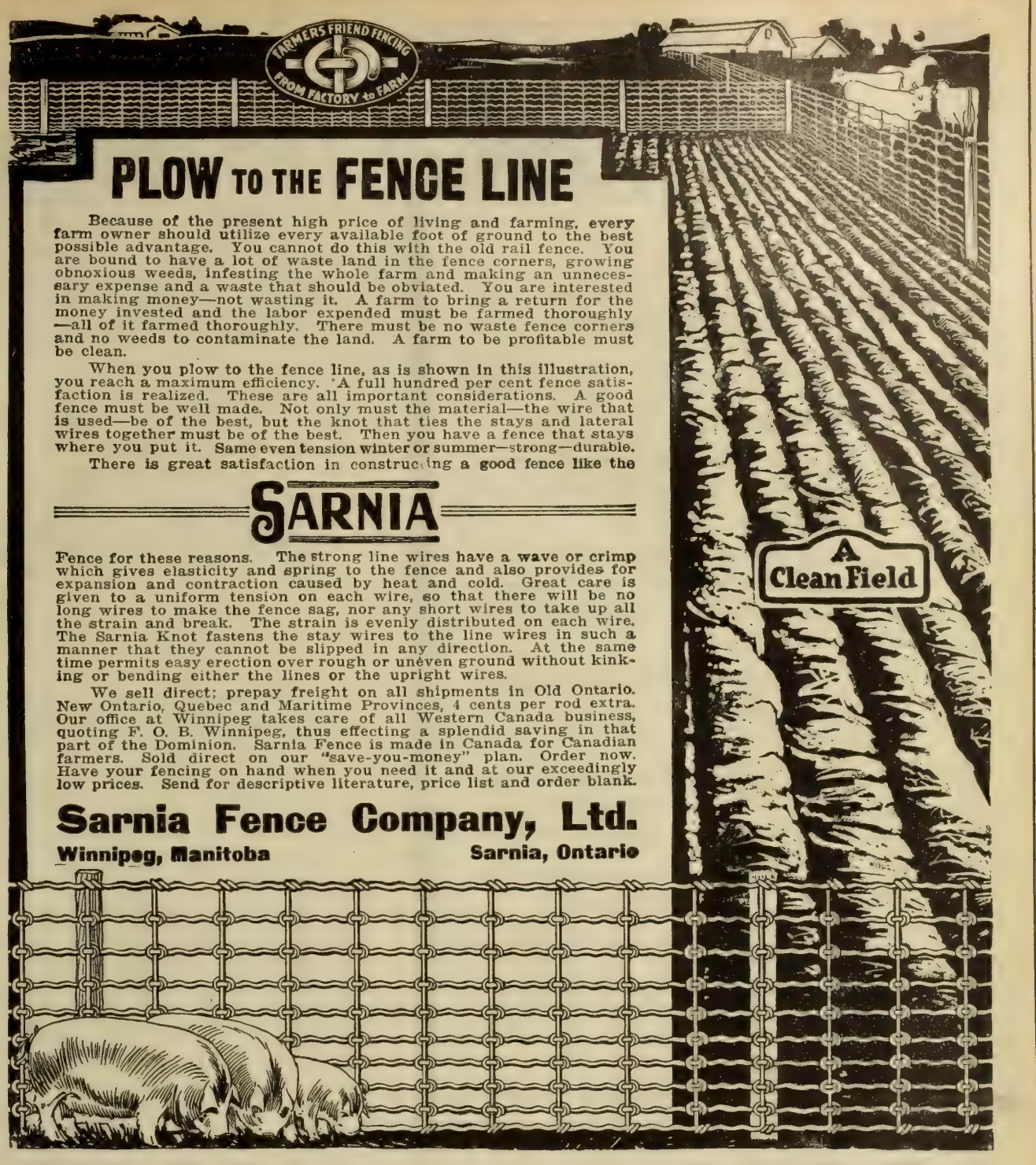
By John G. Brewster

After clearing off all rocks from the prairie, I would proceed to break up the sod about the last of May or first of June. I plow as near to 3 inches deep as possible. After the first rain I put the packer on and go the same way as the land was plowed. I find this places the sod down better where it belongs. Then, about the last week in July or the first week in August, depending on how the harvest is coming along, I backset it; that is, I start and plow it again with the stubble bottom about 8 in. deep. I have a 25-50 gas engine and when breaking I pull a 5-bottom plow. When I backset I throw two of the bottoms off and put a packer behind the three plows and one section of harrows. The packer is one of my own make. I took two old mower wheels and drilled holes at the right distance to belt 2 x 6 wood, 4 ft. 6 in. long, all around. Then, by putting the axle at the mower in and making a 4 x 6 frame around it, it can be drawn after the plow very nicely. As soil is moist it clogs up a little and is quite heavy enough to do a good job. The harrow helps to make it heavier. Thus I have a nice field plowed eight inches deep, packed and harrowed, before harvest time.

If, after harvest begins, bad or wet weather ensues, we put the horses on the harrows and harrow this land at every opportunity till freezing-up time. Thus I have a field full of vegetable matter in the centre where the wheat roots go.

In the spring I give it one more stroke with the harrow and seed my wheat, then pack and harrow it again to make sure it is well-covered with a nice dust mulch. If any one treats a piece of new land in this way or in some similar way he will see his wheat doing just as well as that of his neighbors who break and disc several times till it costs as much as the second plowing. If a drought comes in July and most of the wheat is suffering, you will see this crop hang out a week or ten days longer and in that time rain will likely come. Not only does it pay to work land this way for the first crop, but you will get the benefit from the second as well.

I would disc the stubble as soon as possible after the wheat is off to get the weeds and shelled wheat growing. Then disc it in the spring. You will not be bothered with any grass. I have threshed 37 bushels of wheat from a second crop along a strip of new land worked as I have done, that yielded only 42 bushels per acre.



PLOW TO THE FENCE LINE

Because of the present high price of living and farming, every farm owner should utilize every available foot of ground to the best possible advantage. You cannot do this with the old rail fence. You are bound to have a lot of waste land in the fence corners, growing obnoxious weeds, infesting the whole farm and making an unnecessary expense and a waste that should be obviated. You are interested in making money—not wasting it. A farm to bring a return for the money invested and the labor expended must be farmed thoroughly—all of it farmed thoroughly. There must be no waste fence corners and no weeds to contaminate the land. A farm to be profitable must be clean.

When you plow to the fence line, as is shown in this illustration, you reach a maximum efficiency. A full hundred per cent fence satisfaction is realized. These are all important considerations. A good fence must be well made. Not only must the material—the wire that is used—be of the best, but the knot that ties the stays and lateral wires together must be of the best. Then you have a fence that stays where you put it. Same even tension winter or summer—strong—durable.

There is great satisfaction in constructing a good fence like the

SARNIA

Fence for these reasons. The strong line wires have a wave or crimp which gives elasticity and spring to the fence and also provides for expansion and contraction caused by heat and cold. Great care is given to a uniform tension on each wire, so that there will be no long wires to make the fence sag, nor any short wires to take up all the strain and break. The strain is evenly distributed on each wire. The Sarnia Knot fastens the stay wires to the line wires in such a manner that they cannot be slipped in any direction. At the same time permits easy erection over rough or uneven ground without kinking or bending either the lines or the upright wires.

We sell direct; prepay freight on all shipments in Old Ontario. New Ontario, Quebec and Maritime Provinces, 4 cents per rod extra. Our office at Winnipeg takes care of all Western Canada business, quoting F. O. B. Winnipeg, thus effecting a splendid saving in that part of the Dominion. Sarnia Fence is made in Canada for Canadian farmers. Sold direct on our "save-you-money" plan. Order now. Have your fencing on hand when you need it and at our exceedingly low prices. Send for descriptive literature, price list and order blank.

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Winnipeg, Manitoba **Sarnia, Ontario**

A MEMORY BOOK FOR FACTORY MANAGERS

By L. M. Brown

If one looks into the management of any factory he will find that one man as manager cannot depend upon his memory to see that all of the details of the business are kept in running order. It will be found that he helps his memory by books kept personally and by his clerks. Also he has assistant managers and heads of departments who all help to keep a certain part of the business in running order.

The dairyman may be justly classed as a manufacturer and yet the duty of keeping the whole farm with all its details in running order generally falls upon the shoulders of one man. Many of these keep books which help them to figure out their labor income but the daily routine and many details are taken care of mostly by memory. A man can trust his memory for certain things, such as what time to milk and what time to eat his meals, but if he places everything on memory he is certain to forget something vital sooner or later.

I found out to my sorrow that I could not trust to my memory. To overcome this I purchased a small notebook and slipped it into my hip pocket. It was surprising how fast that notebook filled up with things which came to my notice. If any part of the machinery needed repairing or replacing I jotted it down. I would make a note when my feed was getting low, of anything that I would need when I went to town. The result was that when I got ready to go to town I could make out my list in a hurry and I never forgot anything. If I noticed some fence posts that looked a little shaky I made a note of it and as soon as the time could be spared my notebook brought the fact to my memory and they were replaced before the cattle got out and injured a crop. And thus all the varied details of the farm were kept constantly under my eye and somehow or other life went along a lot smoother.

A Manitoba Agricultural College bird

SUGAR BEET GROWING IN ENGLAND

The growing of sugar beet on a large scale, and the ultimate building up of a new rural industry is at present occupying the attention of the British Sugar Beet Growers' Society. The possibilities of successful beet growing in England were proved beyond a doubt before the war, both the soil and climate being found favorable. Twenty-six acres have been planted with root this year, and another six hundred acres are ready.

The near future will see the erection of sugar extracting plant which will require six thousand acres under cultivation to keep the pans and vats occupied. It is estimated that the full area required for sugar beet growing on a system of rotation of crops would be some 20,000 acres.

Before the war every man, woman and child in the United Kingdom consumed on an average between eighty and ninety pounds of sugar per annum. Before the war 25 million pounds' worth of sugar, of which about 17 million pounds' worth came from beet, was imported. In terms of weight this represented a total of 1,800,000 tons, of which about 600,000 tons were cane sugar.

Sore Eyes **Granulated Eyelids,** Eyes inflamed by exposure to Sun, Dust and Wind quickly relieved by Murine Eye Remedy. No Smarting, just Eye Comfort. At Your Druggist's 60c per Bottle. Murine Eye Salve in Tubes 25c. For Book of the Eye Free Write Murine Eye Remedy Company, Chicago

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A NEPONSET ROOF

THE economy of roofing with Paroid is apparent when you consider:—

It can be laid quickly, and at half the cost of new shingles.

When put on, Neponset Paroid forms the ideal roofing—fire, weather and wear-resisting.

Neponset Paroid Roofing lives long, stands up, and pays for itself yearly by giving absolute protection and satisfaction.

Neponset Paroid Roofs have proven their durability and economy for twenty years.

Neponset Parbid Roofing can be applied over old shingles without the added expense of tearing them off.

A full set of the tools required for laying Paroid is shown below.

Roof with Neponset Paroid—it Pays.

Neponset Paroid Roofing is made in three colors: red, green and slate grey.

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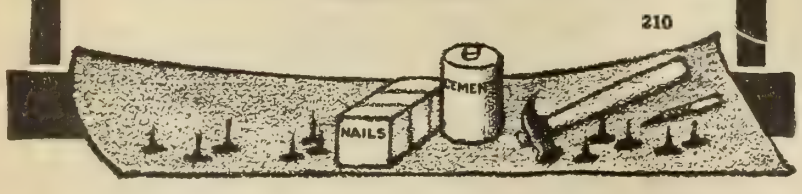

Don't Keep Your Car Near Your Barn

Cars have taken fire on the road—and they are liable to do so in your barn and cause destruction to your buildings and their contents. PLAY SAFE, keep your Auto a good distance away.

The Auto Home Garage

Built in sections of wood or metal clad. Painted and Glazed complete. So well designed that it can be erected in a very short time. Built in Five sizes. Surprisingly low in price.

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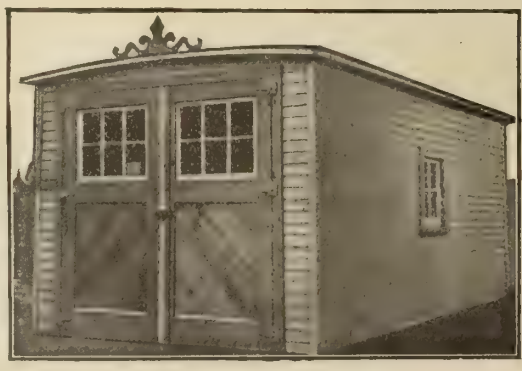
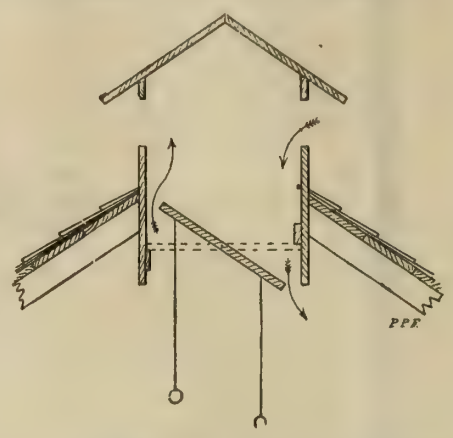


Poor Barn Ventilation Loses Revenue

A GREAT majority of even our best barns, stables, and pens remain unventilated. To the thinking man, this almost amounts to criminal negligance, for with our modern methods of barn building there are few chances indeed for fresh air to circulate. In the old time structures the winds whistled in through many a crevice and nature effected the ventilation that man had not thought of. But now we are troubled with tuberculosis scares. The cause is not far to seek. Foul air does the trick and unless, in our building designs, we make provision for the winds to do their work, our vaunted ingenuity as human beings, master of our fates, has little to justify itself.



An arrangement in the cupola for controlling the ventilator. A good type of cupola is used on the experimental farm barns at Ottawa.

Too true it is, even with those of us who recognize the importance of ventilation, that we allow the cost to settle our plans.

A very common method of providing fresh air is by means of a 4 in. x 4 in. inlet flue entering near the ceiling on the outside. The length of the flue in the wall to the joint where it opened out on the outside of the barn was not over two feet. In other barns a piece of 4 in. or 6 in. stove pipe extending through the wall in two or three places, or a 4 in. tile extending through the concrete wall a few inches above the floor line is supposed to admit a sufficient quantity of fresh air to keep the barn well ventilated. No such make-shift methods work.

Yet many of our recommended systems, put in conscientiously by farmers, have failed to work. This has made the question ever an open one. To solve it, many farmers put a plain shaft from the stables to the cupola on the roof and depend on intakes in the walls. This, it is true, does answer in many cases, although the drafts are such that it is not always advisable. Let us look at the two main systems.

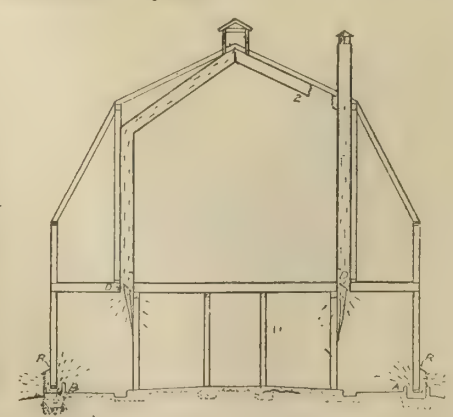
The King System

Most readers are familiar with the principle of the King system of ventilation. It is commonly spoken of as an automatic system, but as an automatic system it will prove to be practically worthless, for any ventilating system needs attention if it is to do the work for which it was designed. The efficiency of the King system depends upon the location, size, straightness, and construction of both intake and outlet flues, as well as good tight walls and ceilings, well-fitted doors and windows. As in any automatic system no means can be provided for warming the incoming fresh air except as it is warmed by the heat given off by the animals in the barn.

The fresh-air intakes in the King system of ventilation bring the air into the barn at the ceiling and the outlet flues remove the air at the floor line, thus providing for a mixing of the air entering the barn with the warm air at the ceiling before it is breathed by the cattle. The advantage of this arrangement is that drafts are prevented largely, air is warmed before being breathed, and a circulation of air is maintained.

The fresh air intakes are usually placed every 12 to 14 feet apart along the side of the barn and usually one or two are placed at either end. One important point in the construction of an inlet flue too often overlooked is building it of sufficient length to prevent back draft. Five feet should be the minimum length and longer would be better. Even with the inlet flues five feet long, there are times when the air will flow outward on the opposite side of the barn from which the wind is blowing. As stated before, this system is not entirely automatic and so some sort of a register, which may be closed during extremely cold weather in order to prevent drafts in the barn, should be provided. Since barns are rapidly becoming standardized and as there are two common practices in the arranging of cows, there are two methods of arranging the inlet flue openings on the inside of the barn. In case the cows face the wall the inlet opens at the ceiling or, if the cows face the centre, the inlet flues are carried over to the centre feeding alley and opened directly over the centre of the barn.

Usually some means is provided for getting air into the barn but too often no way is provided to remove foul air from the barn. It is queer to what extent money will be spent on an improvement which is of no practical benefit, but only improves the looks of the barn. Hundred of good-looking metal ventilators, or cupolas, as we used to call them, have been placed on the barns. These are of no value to the barn until they are connected with an outlet flue leading from the stable proper. Hay mows do not need any more ventilation than can be secured through windows and doors so that it is an absolute waste of money to place a ventilator on a barn and not connect it with some sort of an outlet flue.

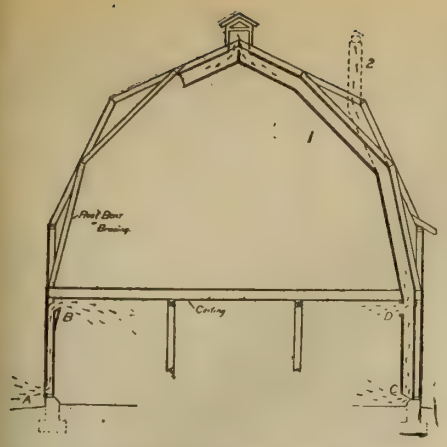


This illustrates the Rutherford system. It is especially good where the animals face out as the manger protects the stock from drafts. Corners should be provided for closing the intakes on windy days or in extreme cold weather. From 8 to 10 square inches per head of cattle is commonly recommended by this system.

Building an Outlet Flue

The success of any ventilating system depends largely upon the design of the outlet flues. They can be made of galvanized iron insulated, or of lumber and paper. As an outlet flue is nothing more or less than a chimney we ought to give as much attention to the design as we do to the designing of a chimney on a house. First of all, it should be straight and so smooth on the inside as is possible, for every turn or bend will reduce the carrying capacity of the flue. It should rise above the highest part of the barn in order to receive the full force of the wind. The velocity of the wind, as well as the difference in temperatures between the air on the inside of the barn and that on the outside, makes the flue draw. Since outlet flues remove the foul air from the barn, care should be taken that they are not placed too near the heads of the cattle where all of the foul air would pass directly by the animals and much of it be breathed by them.

An outlet flue cannot be built of any old scrap iron or old boards picked up about the farm. If the outlet flue be



This cut illustrates the King system. The intake openins should be ten or twelve inches below the ceiling. Professor King recommended a large number of intakes rather than a small number of larger ones. The outside opening is screened with coarse mesh wire. The inside opening is regulated in various ways by means of cast iron registers, sliding dampers, or by a door, hinged at the bottom and controlled as to position by means of a stick, being dropped into notches on the side of the wall below the opening. The out-takes in this system are put up in pairs. They take the air at a point about a foot above the floor, and pass up and along the inside of stable wall to the loft, one flue entering the cupola from each side of the barn. In the stable proper, the flues are made about twice as wide as they are deep in order not to project too far out from the wall; but at the loft floor, they should be made square to reduce the outside cooling surface to a minimum. They pass up through the loft in various ways: they may pass up along a roof-bent; or they may pass out of the roof at the curb; or they may pass up along the underside of the rafters.

made of galvanized iron, it must be properly insulated, otherwise the moisture passing through the flue will be condensed and fall as water, causing the flue to rust, soon defeating its purpose as a ventilator. The opening of the outlet flue is placed about one foot above the floor. It is the usual practice in building an outlet flue of wood to use ⅞-inch matched flooring running horizontally and the same sized flooring running vertically and, between them, a layer of water-proof paper is placed. This makes an air-tight flue that can be built by anyone.

As the size of both inlet and outlet flues depends upon the size of barn and the number of animals which will be stabled in it, no specific directions can be given that will apply to all cases. Generally speaking, inlet flues are built either 6 in. x 10 in. or 8 in. x 12 in., while a good size for outlet flues is 18 in. x 24 in. or 16 in. x 22 in. An inlet flue 6 in. x 10 in. will provide air for one cow, or two flues 8 in. x 12 in. will supply fresh air to 3 cows, while an outlet flue 18 in. x 24 in. will remove the foul air from seven cows or six horses. These figures are offered as a guide to those considering installing a ventilating system.

Most manufacturing companies selling cupolas and barn equipment maintain a department which will give purchasers of their equipment advice on installing an entire ventilating system. A few companies are now making it a part of their business activities to plan and design a ventilating system suitable for the barn of the farmer purchasing their equipment. Specific information for an individual problem also can be secured from the agricultural college. No farmer and stockbreeder can afford to make the serious mistake of not having a ventilating system and he should not be content with a make-shift design.

The Rutherford System

The Rutherford system of ventilation allows the fresh air to enter the intake flues just above the ground level, turn downward, pass inside the stable, and then rise. The outside is protected by a little slanting roof. If the system is installed when the barn is built, the intake flues may be built in the foundation wall, or if the system is installed later the flues are put in above the floor level. On the inside a partition of concrete or wood rises above the floor level to keep the dirt from sliding into the flue, and to direct the entering air upwards. Lids should be provided for closing the intakes when necessary. It is well, also, to protect them with coarse screens to prevent their becoming filled with leaves, straw, etc. The small mesh poultry screen does very well for this purpose. From 8 to 10 square inches of inlet area per head of cattle is recommended. Horses should be given 10 to 12 square inches of inlet area. If a barn contains 30 head of stock, the total area of the intake flues should not be more than 300 square inches. If four intake flues were put in, the area of each would be 75 square inches, or an opening 5 x 15 inches, which would make a bad draft. If six intake flues were used the area of each would be 50 square inches, or less, which would give an opening about 4 x 12. For our conditions a large number of smaller intakes would be greatly preferable to a small number of large intakes.

The out-take flues start at the ceiling and pass up through the loft (usually alongside the purlin posts, if there are any) to the cupola, being put in in pairs in large barns. There will probably be one or two in the small barn, four in the ordinary barn, and six in the very large barn. The out-take flues can be carried up through the roof in various ways. The total area of the outlet flues in the Rutherford system is made twice the total area of the intake flues.

VOCATIONAL THERAPY

By Andrew McTaggart

"Vocational Therapy!" Who among us ever heard of such a thing till a month or so ago? Yet vocational therapy is proving to be the best thing that thousands of the best blood of Canada ever encountered. This somewhat staggering title simply sets forth the means applied by our Government for fitting the youth who have returned from the war for civil life. Especially does the term set forth what is being done for the wounded or otherwise injured by the great war.

Here is one illustration of what is being done. A foreigner who had come to Canada just as the war broke out enlisted on the first call to arms, though he was unable to speak English fluently and utterly unable to read or write it. He was wounded in the war and was returned to Canada to get well. Under the new method he learned to read and write our language and qualified for the position of a stationary engineer. He leaves the ranks to take up a position at a salary of one thousand dollars per annum. He is a workman with high ideals. Wherever he goes he will prove himself a friend of law and order. His case is but typical and every man thus qualified by the new system means something for the stability of the commonwealth.

But why should we wait till a man is wounded before we aim to qualify him for the best that is in him? Why should we wait till he is thirty years of age before we do all that can be done to turn our young Canadian life towards the best they can render the nation and the race?

The facts that cannot be blinked at prove that the most appalling waste in Canada is the waste of its youth. The city boy is eager to run an elevator, to act as office boy or to sell papers or to drive a delivery wagon when he should be being fitted for citizenship under the guidance of inspired and inspiring teachers. The country boy is eager to drive the harrows or to putter about an engine or to be on the road while he should be under the guidance of men who will train him for duties that are really worth while.

There are privileges already for those who will avail themselves thereof. The pity of it is that those who need those advantages most fail to seize them. The same principle held when the soldiers came back. At one centre little over thirty per cent. of the returned men were willing to take the instruction offered. But the men were soldiers and the orders were that every man had to get busy and remain busy. The result has proven that many of the men who were thus compelled to take the course that they and their officers in consultation agreed was the best course are now the first to express their gratitude, that in their hour of sore, but unrealized, need **someone thought for them and prepared them for a life of manly independence.**

Does not this suggest what may be done for young Canadians? Will our rulers not do well to reconstruct some of their conceptions of what may be done for the young life of our country? If it has proven of value to make matters of public health compulsory and to demand that the forests and mines shall not be wasted, why not work towards the condition in which it will be increasingly difficult for a youth to waste his golden years and so to waste his life?

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Send for our Folder today. It is crammed full of interest to any farmer who has buildings to put up—it is absolutely free,—it explains fully the most complete service ever offered free to Canadian Farmers. Ask for extra copies for your friends if you wish them.

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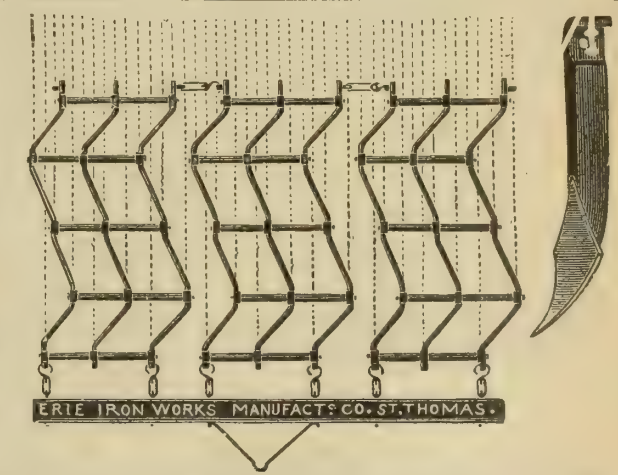

Erie Lance Tooth Harrow is the finest and most useful article that can be placed on a farm. The teeth are so shaped that they tear rough ground and cultivate and make the finest seed bed possible. Once used on a farm, and it will be the last implement parted with. Made strong and adapted to the roughest usage. Supplied in sets of 2, 3, or 4 sections, 15 teeth to a section. Each section covers 3 feet of ground in width.

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A Silo is almost as necessary on a farm as a pasture. It gives cattle green feed in the winter and when drought dries up the meadows in the summer. A Silo filled with green feed while it is fresh and succulent preserves it and improves it and it gives cattle an appetizing and stimulating ration. Bissell Silos are of pine or spruce staves preserved in creosote oil, steel splined, steel hoops, doors and staves are air-tight. Made in popular sizes. Prices have been made attractive. Consult us freely as to your requirements. Illustrated folders on request.

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STEVENS' BLOOD, BONE AND POTASH FERTILIZER
A COMPLETE FERTILIZER
Analysis:-2 Ammonia, 6 Phoc. 2 Acid, Potash, 30 Lime
Write for price delivered to your station. George Stevens, 364 Mark St., Peterborough, Ont.

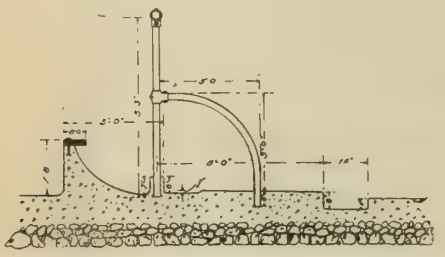
Planning for Calves and Other Stock

Some Useful Ideas With Regard to Building

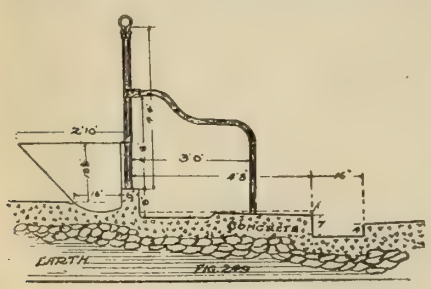
Parts of the portable poultry house

FOR convenience, it is advisable to have the barn for the young stock connected with the main dairy barn, says an *Experiment Station Bulletin.*

The young stock may occupy a portion of the main cow barn, but there are several reasons why it is preferable to have them somewhat isolated from the rest of the herd. When the calf is removed from the dam, it means less disturbance to her if the calf does not remain near. Again, it often happens that an odor develops in the calf barn that would be objectionable in the milking barn. In the winter, the calves, if isolated, may be spared a certain amount of exposure as a result of the opening of doors necessary to carry on the regular dairy barn operations.

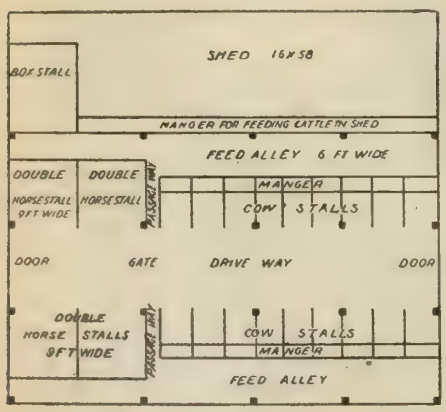


Sectional view of cement platform for stables



Another method of laying cement for stable floor

On the other hand, the portion of the dairy barn occupied by the mature animals is materially warmed in winter by the animal heat given off. If the calves are in this portion of the barn, the temperature in cold weather will be more favorable for them than if they are isolated.



Plan for a small barn

The location of the calf pens on the south or the east side of the barn is preferable, as the outdoor yards connecting with the pens will then be protected from either the north or the west winds.

With a herd of forty grade cows, accommodations for young stock should include pens for twelve to fifteen calves, stalls for ten to twelve yearling heifers, and a few box stalls for the cows. The bull pen can be located in this wing.

Since calf stalls require a large amount of bedding, it is convenient to have this wing of the barn two stories high in order to permit the storage of bedding in the loft. Bedding for the entire herd can be stored here, and if straw is used, it can be put in directly from the threshing machines.

To assist in maintaining a comfortable temperature in winter, the ceiling of the first storey of the calf barn should be built one to two feet lower than that of the dairy barn, which usually has a height of eight to nine feet. For the same purpose, there should be as few doors as convenience will permit, and a moderate amount of window space.

The calf pen need not be more than 30 feet wide. If wider than this, the pens are either too long or more space than necessary is provided in the feeding alley. For calves under six months of age, at least 20 square feet of floor space per calf should be provided, exclusive of the manger. It is desirable that stanchions be provided for use at feeding time.

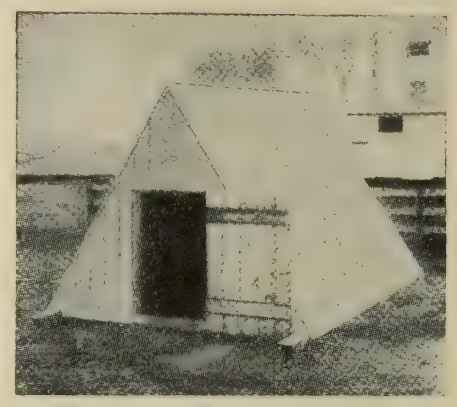
A convenient arrangement for cleaning the calf barn is to have the track for the litter carrier connect both the main barn and the calf barn, so that the same carrier may be used for both barns. The floor of the pens should slope uniformly from the front and rear at the rate of 1 inch in 4 feet to a point 3 feet from the barn wall. This helps to keep the front part of the pen dry and is of special value where an abundance of bedding is not available, or where the calf pens are cleaned occasionally with water.

Yearling heifers require about 40 square feet per head when running loose in the barn, but somewhat less when stanchioned. Arrangements may be made so that the area devoted to stalls for yearlings may be partitioned off into box stalls or maternity pens by means of swinging gates. When not in use, the gates fasten against the wall. The stall platform for heifers of the large dairy breeds should measure from 3 feet 10 inches to 4 feet 6 inches in length, while the width need not exceed 3 feet. For heifers of the small dairy breeds, the platform should be from 3 feet 4 inches to 4 feet long and not over 2 feet 10 inches wide.

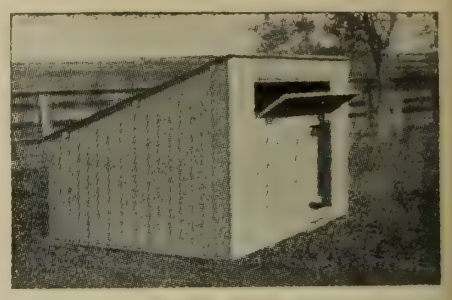
A consideration of prime importance in choosing the site for the dairy barn is that it shall have good drainage. The yards should slope away from the barn, the main floor of the barn being above the level of the yard in order to avoid the possibility of water entering.

It is very desirable that the barn be located so that the yards, so far as possible, are to the south of it in order that the stock, when turned out in winter, may get the benefit of the sunshine, and that the barn may act as a windbreak to the yard.

A yard is a necessary accessory to the dairy barn, but its care is very often neglected. Frequently a very fine barn is located in a poorly drained spot where the cows must wade through mud up to their knees to reach it, or in winter must wait in an unprotected yard having a north or west exposure. The yard need not be large, but it should be sheltered so that the cows can be turned out for daily exercise, except possibly on very cold or stormy days. As protection for the yard is most needed on the north and west sides, the barn, where possible, should furnish shelter on these two sides. Board or masonry walls six feet or more in height may be used as a protection on the south and east sides.



Portable pen for sow and little pigs



Practical type of portable chicken house

A level yard, or one with pockets, soon becomes filthy, and the cows are not easily kept clean during a wet period. In any yard, after a time the manure becomes mixed with the soil and tends to hold moisture. Paving the yard with soft coal cinders or gravel aids in preventing an accumulation of mud, but the cinders or gravel must be renewed frequently. Concrete paving, where not too expensive, is quite satisfactory. A yard that is paved can be easily cleaned, and a large amount of manure, which would otherwise be mixed with the gravel or soil and lost, can be saved and hauled to the fields.

Modern dairy barns, showing the use of sheet metal and cement

Treatment for Milk Fever

THOSE who have heavy milking cows coming fresh will be in danger of suffering severe loss through the disease erroneously called milk fever. As a matter of fact an animal thus affected seldom has much fever and as a rule there is an actual reduction in the temperature of the body. It is more of a brain disease than anything else and hence has been called parturient apoplexy.

This disorder seldom affects any but well-fed heavy milk producers. It comes on suddenly directly after calving and terminates in a very short time either in recovery or death. Cows with their fourth, fifth or sixth calf are more susceptible to it than others. In these high geared milking machines all the feed that is eaten in excess of that required to run the machine is turned into milk and not into flesh or fat. This excess nutriment stored up in the glands and the blood induces what is called a plethoric condition or excessive fulness of the blood vessels.

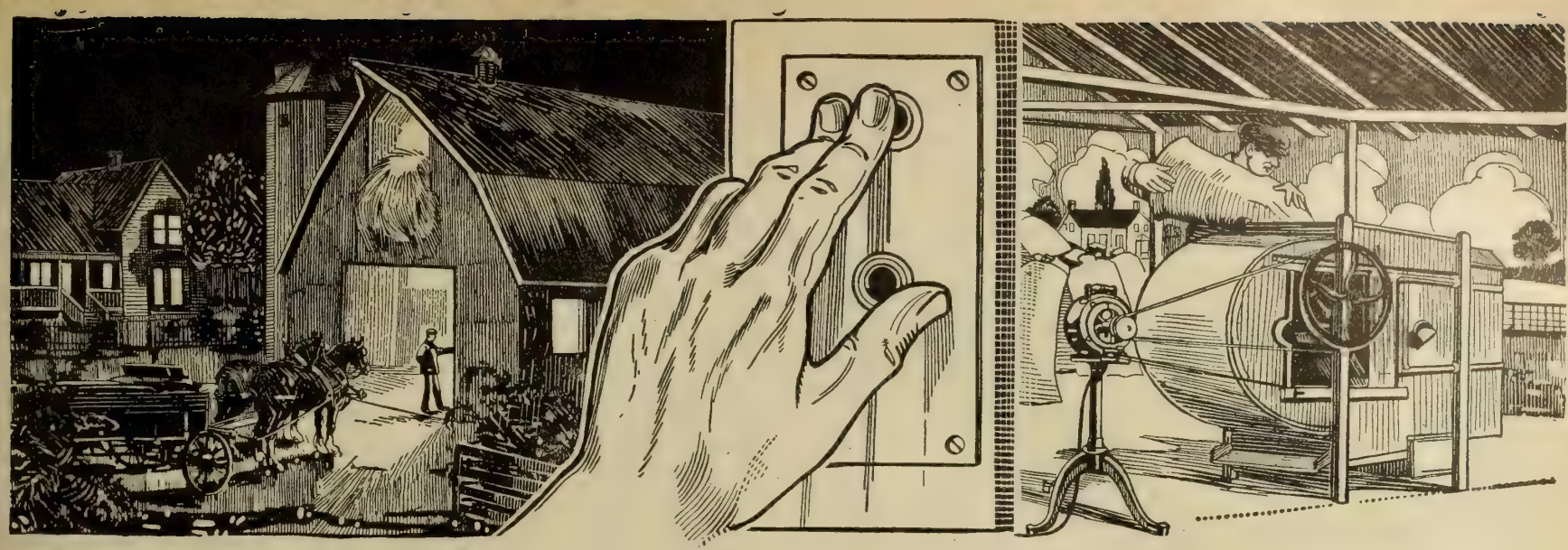
When the calf is born and the blood which has been sustaining it is thrown back into the circulation, if the udder does not begin active secretion very promptly there is danger of milk fever. At first the cow is excited and restless, stamps with her hind feet, switches her tail, stares anxiouly about the stall and walks about uneasily, making ineffectual attempt to relieve the bowels. Within a few hours paralysis begins, which is indicated by a staggering gait, especially in the hind legs and by weakening of the knees in front. She then goes down, pays no attention to her calf, has a staring look in her eyes and will not wink if the eye ball is touched. She turns her head to one side, usually the left. The pulse is weak, averaging from fifty to seventy beats in a minute. The temperature of her body may reach 103 and may drop to 95 degrees. In a case of this kind something must be done and done quickly.

Until within recent years there was no known cure for this malady. Now it is not difficult to manage if one has prepared himself for it. The best remedy is simply to pump air into each quarter of the udder without drawing out the milk. If one has no milk fever outfit a veterinarian should be called the moment the first symptom is noticed. He usually has the necessary appliances.

If, however, a veterinarian cannot be had at once wash the udder carefully with warm water and some antiseptic, wash the hands carefully, take a milk tube and a rubber tube of a bicycle or automobile pump, after they have been boiled for fifteen minutes in water, and simply fill each quarter of the udder with air. Then tie a band around the upper end of the teat before removing the milk tube in order to retain the air. Everyone owning a dairy herd should have an outfit which is especially designed for the treatment of this disease. With it at hand there is no need of losing any cows because of milk fever.

DAIRY SHORTHORN AVERAGE

THE 106 head of Dairy Shorthorns sold at the Dairy Shorthorn Congress at Erie, Pa., last month, averaged $517. R. R. Wheaton, of Thorndale, Ont., bought the first-prize aged bull for $675.



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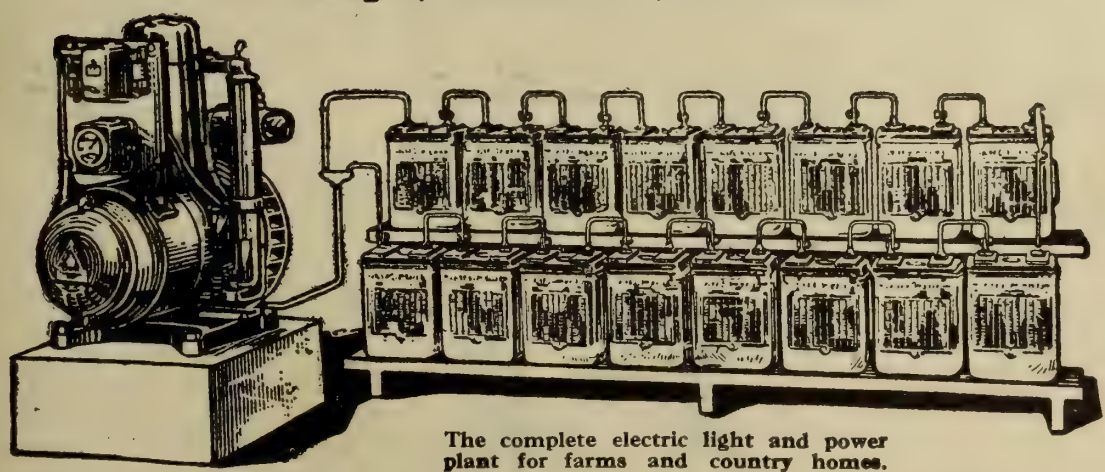

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FARMERS' MAGAZINE
143-153 University Ave., Toronto, Ont.

Light and Power for the Farm Home

ELECTRICITY, cheaply produced, and at an investment cost far below that of some of the luxuries he now enjoys, is now at the disposal of the farmer. This was not true half a dozen years ago, but it is to-day. Realizing that there would be too long a wait before country people could enjoy the convenience and economy of electric current as furnished by the Hydro companies, rapid as has been their growth in recent years, far-sighted manufacturers have designed complete and easily operated equipments which can be set down in the farm dooryard more easily than a threshing engine.

The power washer not only does away with the heavy work of washing but lets the housekeeper get on with other work which machinery cannot do.

In prosperous communities a very large proportion of the farmers own automobiles. Many must have a new model every year. These machines cost anywhere from $500 to $2,500. Yet on these same farms in the majority of cases, the kerosene lamp and lantern — wasteful, flickering and dangerous—are still doing service. Hand or dog power drives the churn, the separator and the grindstone. Cumbersome steam engines operate the threshing machine and the silage cutter.

Asked why safe and economical electric current is not used for these purposes, the owner will probably say that it would cost too much and in addition that there would be no one to operate the plant, and that electricity is a dangerous thing to handle. At one time these arguments might have had force, but not at present.

With one of these lighting outfits, in addition to being able to furnish from eight to fifteen 16-candle power lamps, it is possible to operate the following motor driven appliances: electric fan, sewing machine, washing machine, suction cleaner, pump, circular saw, lathe, ice cream freezer, cream separator and churn. Of course, the plant is not large enough to operate them all at once, but this latter necessity never arises. Besides, the freezer, churn, separator, etc., may be installed in the engine house and driven direct from the engine through a line shaft, so that no motors will be required for them.

For the operation of the lighting plant, less skill is required than to run the simplest automobile. It consists of a gasoline engine, an electric generator or dynamo, a storage battery of sixteen small cells, which can be placed on a shelf, and a simple switchboard.

The cost of lamps and wiring will be about $3 per lamp, more or less, depending on the conditions and grade of materials employed. An estimate of materials and wiring may be obtained from a local electrician or contractor.

In deciding whether or not to install an electric plant a good business man will inquire into the cost of operation to see if his investment will bring returns in the form of actual cash saved over old methods and in increased convenience and safety. Let us examine a plant. It consists of a 2½ horse power engine, dynamo for generating current, switchboard for distributing and controlling the current and storage battery. The storage battery bears much the same relation to a dynamo as does a water tank to a pump. It stores electrical energy in the form of chemical energy, giving the energy back again in the form of electric current for the lights when the engine is shut down.

The electric iron does away with the trouble of keeping up fires, the discomfort of the heat of a stove in warm weather, the walking to and from the stove for a hot iron and the inconvenience of the iron cooling.

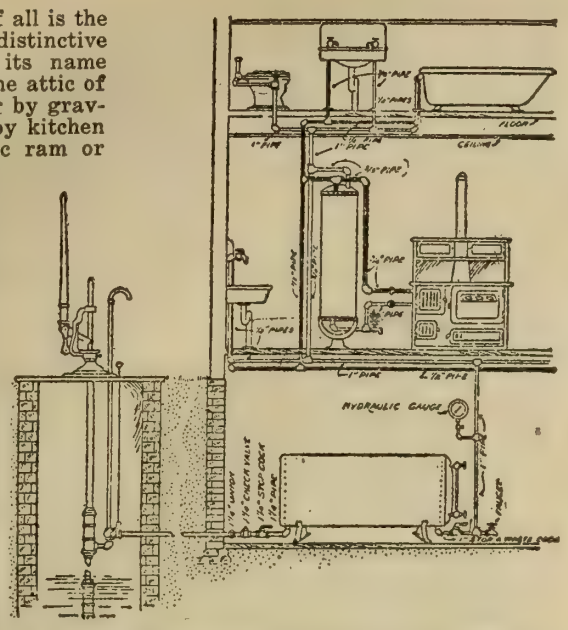
A 50-light outfit may at first sight seem unnecessarily large, but when one begins to plan just where he should put lights, it will quickly be seen that the manufacturers have calculated carefully and well. A six-roomed house, for instance, would require, say, four lights for the parlor, three for the dining room, four for the sitting room, three for the kitchen, one each for bedrooms, bath and pantry, and one or two porch lights. Add to this the lights required for barn, dairy, granary, and other outbuildings; places are soon found for all the lights. Of course, while all these lights will be needed at some time or other, it rarely, if ever, happens that all will be burned simultaneously, which leads naturally to the point we have in mind, in which the prospective purchaser is deeply interested, namely, the cost of operation.

The most efficient and, therefore, the least expensive method of operation is where the lights are burned direct from the dynamo, as this prevents the slight loss occasioned by use of storage batteries. Of course, where a very few lights are in use, as during the day or in the very early morning, the storage battery serves a very useful purpose, and really makes for economy. The costs are figured, however, for evening lighting, with the lights burning direct. Assuming, for convenience, that all 50 lights were burned at once, the figures shown are interesting. The 2½ horse-power engine, which furnishes the power, will use about a quart of fuel an hour, so if the lights were turned on at 5 o'clock, a fair estimate for winter lighting—the actual amount of fuel used for the evening lighting would be just a little over a gallon.

Besides using current from the dynamo for light and power, one will usually arrange a line shaft to be driven by the engine and use power therefrom to run the washing machine, mangle, pump, grindstone, root cutter, feed grinder, etc. This work will usually be done during the day, and at the same time the engine can be charging the storage battery. Less than one-third the power of the engine will be required to do the latter, hence it has easily ½ horse power available for other work. This point should be considered in figuring the cost of operating a lighting system, as in the average case it would be unfair to charge the total cost against the plant as a lighting plant alone. It has been abundantly proven that a small engine on the farm pays big returns, so that one can almost subtract the engine part of the electric light plant and charge it to general farm expense.

Farm Water Systems

PERHAPS the simplest of all is the attic tank system, the distinctive feature of which, as its name implies, is a storage tank in the attic of the house for supplying water by gravity. The tank may be filled by kitchen pump, power pump, hydraulic ram or siphon, or by the rain water from the roof. This system is best adapted for utilizing the soft water from the roof or cistern for washing or bathing but for drinking purposes the water would become rather warm in summer-time. The tank may be made of wood lined with galvanized iron, of metal, or of two or three oak barrels joined at the bottom by iron piping. A tank about 3 feet square is large enough for the ordinary-sized home. This system is giving good service in many homes to-day. One disadvantage is that occasionally the tank may spring a leak, causing damage to the house or furniture. As the quantity of water stored is usually not large, the system is not applicable for washing vehicles, etc., nor for fighting fire, especially as it will not deliver water higher than the tank itself.



Pneumatic tank supply system with the tank in basement supplied by hand force pump.

A system somewhat akin to the one just considered is that of having a large stave or metal tank erected on a high tower in the yard usually in connection with the windmill structure. Water is pumped into it by one or other of the methods already noted and flows by gravity through pipes laid to the house, barn, lawn and garden.

The system has many obvious disadvantages for general use, but it is well adapted for lawn and garden watering, as the water has a chance of being warmed in the sun before being applied to the plants. Except for this particular advantage, it is doubtful if anyone would consider installing this system to-day when superior ones can be secured, for example, the compression system.

In bare outline this system consists in storing water in a steel tank under high air pressure, which drives the water out of the taps whenever they are opened.

The introduction of this system has made it possible for rural homes to have practically as good a water service as those in towns and cities. Since its advent a few years ago it has been installed in a great many rural homes, also in many suburban and village homes and summer resort cottages. Its popularity is due to its many distinct advantages over other systems, chief of which are given herewith:

1. The stored supply of water is kept clean, pure, aerated and cool in an air-tight tank underground or in the cellar and always under sufficient pressure to render it available at all parts of the house and barns for ordinary service, and, if necessary, under extra pressure for fire protection, watering lawns and garden, and washing vehicles.
2. It is simple and compact in construction, durable, efficient, and easy to operate, the electric-driven outfit being entirely automatic.
3. Unlike the elevated tank system it is not a source of danger to life and property and the stored water is not subject to freezing in the winter and heating in the summer.

Farmers who have installed this system in their homes freely testify to the importance of these advantages. Indeed only those who have enjoyed the privileges of a good water system, like this one, can fully appreciate its value.

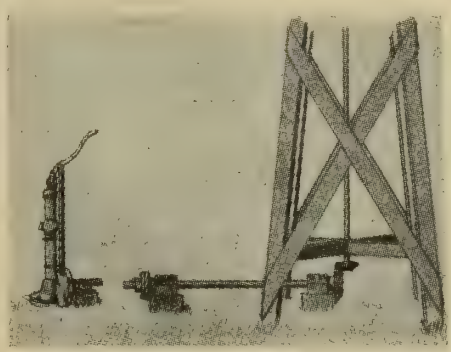
As already intimated, the power used may be hand, gas engine, electric motor or windmill. Probably the majority of the systems installed to date are operated by hand, but the power-driven are rapidly increasing, and are very much more satisfactory. One, or one and a half horse-power gasoline engine is adequate when used only for pumping, but in many cases it would be advisable to have a larger engine so that other work might be done as well. Since the electric-driven units are absoutely automatic they need not be so large and, consequently, less power is required, about ¼ to 1/6 horse-power motor being large enough for small outfits for short suction distances.

Names and addresses of companies handling this system may be secured from their advertisements in farm magazines and papers, from local plumbers and hardware dealers. It is a good plan to write the various firms for their catalogues describing the system, and make a careful study of the various types before purchasing. The companies will answer questions and give estimates of costs without any charge or obligation to buy.

The costs can be given only in a very general way as they vary considerably with size and type of installation, conditions under which the system is installed and so on.

1. Hand operated plants, $90 to $130. Size of tank 30 in. by 6 ft.
2. Gasoline engine operated, about $200. Size of tank 30 in. by 6 ft.
3. Electric motor driven unit, about $200. Size of tank, 24 in. by 6 ft.

All these estimates include tank, pump with air compressor, engine or motor for power, pressure and water gauges, connecting pipes, valves, unions, etc., but they do not include the service pipe throughout the house or barns, or from the pump to the well.



Gearing a pump to a windmill. Power is transmitted by bevel gears from the jack at the bottom of the windmill, by tumbling rods to the pump if necessary. This shafting can be put in a trench. There would be some lost power by this method.

MAINTENANCE OF ROADS

THERE is to be more road building this year than ever before, for more public money is available and it is desirable as insurance against unemployment, says *Hoard's Dairyman.* Yet, we are more convinced than ever that going hand in hand with building must be maintenance, and of the two maintenance is the more important and the more neglected and abused. Patrol maintenance seems to be the solution, and we trust the time is not far distant when it will be adopted for other roads as well as for the regular state highways.

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LANDS WANTED FOR... **SOLDIER SETTLERS**

POWERS have been granted to the Soldier Settlement Board of Canada by Order in Council of the 11th of February, 1919, to purchase land to be re-sold to qualified returned soldiers who desire to make farming their permanent vocation.

To assist soldiers in settling in any suitable district in which they may wish to locate, the Soldier Settlement Board desires to have filed in each of their Provincial Offices a select list of farm lands available for purchase in each district of the Eastern Provinces, with full description and lowest cash prices of the same. Purchases by the Board will be paid for in cash.

The public are informed that this land is for purchase by returned soldiers, and must be of good agricultural quality, and reasonable price, making possible the success of the soldier as a farmer. It should be within seven miles of a railway, open, free from weeds, water supply assured, and of moderate price. In giving particulars, mention nearest market and school. In comparison with the vast supply of vacant lands, the number of farms immediately required will be very limited. Owners, therefore, will kindly assist the Board by offering for the present only land which fills the above requirements.

No commission will be charged or paid. No offers to sell will be binding on the person offering, unless a sale is effected, and no obligation will be on the Board to accept any offer.

If application from a returned soldier be received for the purchase of land, an inspection and valuation of such land may be made by the Board, as soon as free from snow. If approved, negotiations may be entered into for the purchase and sale thereof. An approved list is desired for each suitable district throughout Canada.

All communications concerning land in the Eastern Provinces should be addressed to the Provincial Supervisor of the Soldier Settlement Board for the province in which the land offered for sale is situated, a list of whom is given below:—

ONTARIO:
Mr. W. M. Jones, 32 Adelaide St. E., Toronto.

QUEBEC:
Lt.-Col. Bruce F. Campbell, Drummond Bldg., Montreal.

NEW BRUNSWICK:
Mr. Wm. Kerr, Post Office Bldg., St. John.

NOVA SCOTIA:
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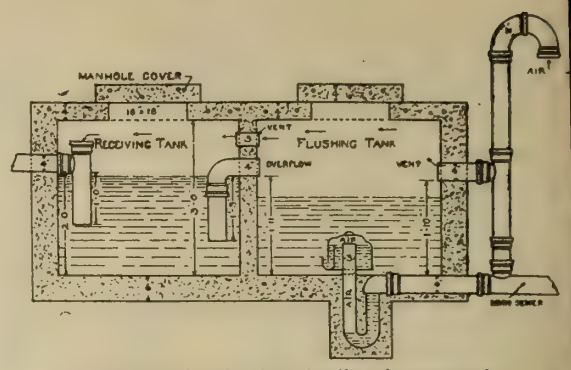
The Septic Tank

THE septic tank system is nature's own way of disposing of sewage, and if the proper conditions are provided, the results are very complete and satisfactory. The process is as follows: From the collecting system the sewage is flushed into the dark watertight settling chamber where it is partly decomposed by a certain class of bacteria. This chamber remains full at all times, and overflows into the discharge chamber whenever fresh sewage is received. The sewage which passes over is not fully decomposed and it carries with it some solids in fine particles held in suspension by the liquid. Further decomposition occurs in the discharge chamber, which is fitted with a valve or siphon so adjusted that when the liquid reaches a certain height the contents of the chamber are discharged automatically into the system of tile called absorption bed. This may occur perhaps once or twice a day, or maybe not oftener than once in two or three days, according to circumstances. The liquid then seeps through the points of the tile into the soil where the decomposition of the sewage is rendered complete by other class of bacteria. Too much agitation of the contents of the settling chamber would interfere with the action of the bacteria, so the inlet pipe is turned down into the liquid about a foot in order that the sewage may enter as quietly as possible. The overflow pipe in the partition wall also turns down into contents of the receiving chamber so that solid particles cannot pass over before being acted upon by the bacteria. It should be emphasized that the intermittent discharge, contrary to the opinion of those who have not given the matter careful study, plays a very important part in the operation. The interval between the flushings allows time for the air to enter the soil, thereby enabling the bacteria to complete the work of purification and the pure water has time to soak away, thus preventing the soil from becoming water-logged with unpurified sewage, as often happens with continuous discharge. The siphon illustrated in the drawings is a reliable and durable type. There are also on the market reliable valves that work with a float and trip automatically when the liquid reaches the proper depth.



Septic tank, showing details of construction

In computing the size of the tank allow about three cubic feet in each compartment for each person in the family. Any variation in size should be made by altering the length or width. The depth should always be in the neighborhood of three feet, although in some cases the receiving chamber is made about eighteen inches deeper than the discharge chamber. This device is especially valuable where space is limited, as by it the capacity of the receiving chamber can be made as great as desirable. The best material for the tank is concrete of rich strength and the pipes or fittings may be either iron or vitrified sewer pipe.

Some points, however, should be emphasized namely: First, that the tile used in making the fittings should be cemented together a few days before the tank is built, so that they will be ready for setting up with the forms; second, only single forms are required; third, that the fittings and siphon or valve should be placed in the forms according to the measurements given in Figure 1; fourth, the forms should be made tight, true to shape, and braced securely in position; fifth, the concrete should be made in the proportions of one part cement to six parts of clean, sharp gravel, thoroughly mixed while dry and again after wetting. Use mixture medium wet and tamp it slightly in the forms; sixth, build the floor and walls at the same time in order to get a good bond between them; seventh, plaster inside of tanks with neat, cement mortar in order to make them watertight, smooth and well-finished before the top is built on; eighth, reinforce the top and the man-hole covers with old pieces of iron or heavy wire; ninth, keep the concrete work moist and protected from the sun for a few days so that it will cure well before being put into use; tenth, be sure to prime the siphon.

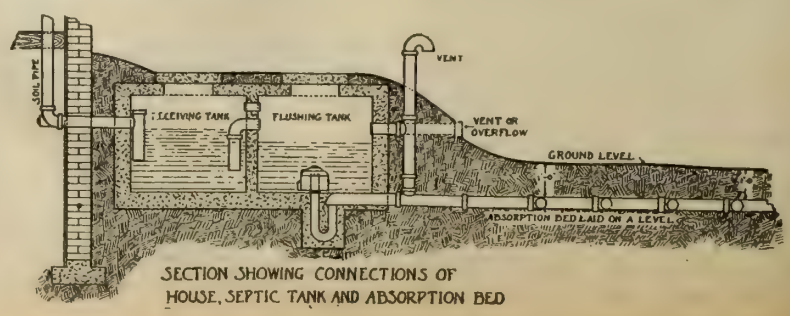
The absorption bed must be on a lower level than the tank, so that it will be possible to keep the lines of tile near the top of the ground, while the tank is below the ground entirely or nearly so. If a sufficient slope from the house does not exist, the tank may be kept partly or wholly above ground level, and banked and covered with earth, and if necessary specially protected in the winter by strawy manure. If the soil be very heavy or wet it should first be underdrained; second, 4-inch tile is preferable to 3-inch for the laterals, and about 35 4-inch or 50 3-inch tile should be used per person of the home; third, all the tile should be laid as level as possible, main included from point where laterals begin to branch off, and they should not be laid deeper than 12 or 15 inches; fourth, the laterals may be placed 4 to 6 feet apart depending on whether the soil is heavy or light; fifth, if possible the tile should be kept away from trees, shrubs or bushes, as the roots may in time choke them; sixth, the lines of tile should not exceed 30 feet in length; seventh, the absorption bed may be located close to the tank or any distance away, depending on circumstances.

The following estimate will serve to give the reader a general idea of the amount of material, the labor and the cost of the septic tank installation described and illustrated herein:

4 bbls. Portland cement at $2.25 per bbl.	$9 40
4 loads of gravel at $1.50 per load	6 00
8 plain 4-inch vitrified sewer pipe at 30 cents each	2 40
15 "T" 4-inch vitrified sewer pipe at 65c each	9 75
3 4-inch vitrified quarter bends at 65c each	1 95
216 4-inch field tile at 5c each	10 80
1 3-inch siphon	12 00
	$52 30

It would require the labor of two men for probably four days to complete the work, and as all the work can be done by the farmer and his assistant no estimate will be submitted to cover the labor.

In regard to the bill of material, the



SECTION SHOWING CONNECTIONS OF HOUSE, SEPTIC TANK AND ABSORPTION BED

estimate of the gravel and the field tile may be too high for many cases as the gravel may be available on the farm or in the immediate vicinity of the builder at a cheaper rate than quoted above, and the tile may have been bought in large quantities for drainage purposes. Also the item of 15 "T" 4-inch vitrified pipe might be reduced to 9 in number by making the laterals twice as long as shown in Fig. 38, which would reduce the cost by about $4. When these probable reductions are taken into consideration the actual cash outlay would not much exceed $40.

The septic tank should be carefully inspected twice a year to make sure that everything is working properly, once just before winter sets in, and again in the spring. And once in two or three years the accumulation of sludge at the bottom of the receiving tank should be removed. The covers should always be replaced tightly, and covered up with soil or turf.

Farm House Heating Systems

THE success of any heating plant must begin with the building construction. The architect and builder must take the responsibility of preparing the groundwork so that the heating contractor, when he installs the system in accordance with the best practice, will not have trouble, and there will be nothing in the way of securing ideal results.

To make plain just what I mean, the builder must see to it that a large, straight flue, preferably round on the inside and of ample capacity, is provided, for it is very necessary to any heating system. If proper regard is not given to the construction and size of the flue, it will make but little difference what kind of a system is adopted and installed, for no system on the market to-day, using coal as a fuel, can produce proper results when an error has been committed in the design or size of the flue carrying away the gases of combustion.

Chimneys should invariably extend above the peak of the roof on the building, or any surrounding buildings that may be close by. No offsets should ever be permitted, and separate flues must be provided for auxiliary heaters, kitchen ranges, etc.

Another thing which the architect and builder should look out for is to see that plenty of headroom is provided in excavating for the cellar or basement. There should be at least eight feet, or more, between the bottom of the joists of the first floor to the floor of the cellar or basement, according to the size of the building. It is not a difficult matter, nor does it represent very much expense when digging the cellar or basement and laying the foundation, to provide a boiler room with its floor low enough to provide a good grade to the flow and return pipes, which convey the heat to the riser pipes leading to the radiators in each room, and back to the boiler.

The modern method of heating consists of warm air furnace heating, and steam and hot water in its various forms. Of these methods the warm air furnace is by far the cheapest when the first cost is the only consideration. The warm air furnace is adapted to small jobs and if a good furnace is used and the same is properly installed it will give satisfactory service up to its capacity.

From our experience it is not practical to heat a building with a warm air furnace that requires more than eight or nine runs of pipe. It is more or less difficult to control air currents and if the runs of pipe are long and too many of them, it is often found that certain rooms, located a long way from the source of heat, are warmed with great difficulty and sometimes not at all.

The cost of installing a warm air furnace will be approximately $20 to $22 per register. This will include the furnace, registers, piping and the necessary labor to put all in place.

With steam heat we meet with a different proposition. It matters but little how long the run of pipe, provided it is covered and not exposed to the cold. Rooms that are located far from the source of heat may be readily heated. The approximate cost of heating apparatus for a residence or small building where eight or nine radiators are required will average $55 to $60 per radiator. There is no limit to the radiators that can be used so long as the boiler or boilers used have the required capacity.

Hot water heating is similar to steam heating but is more expensive to install because larger radiator capacity is required. It is claimed to be more economical than the steam method of heating in point of fuel. The approximate cost will be from $60 to $65 per radiator for buildings that require eight or nine radiators.

BEFORE TURNING CATTLE OUT TO PASTURE

By Nelson McDowell

WE are feeding a steer for baby beef. He was thriving well until January and then somehow he came to a stop. His growth ceased entirely and it became doubtful if he would hold his own. There isn't much profit in giving expensive feeds to a calf if it won't grow. What the trouble was, we had no idea. The steer continued to decline in flesh for three or four weeks before we could find any cause for his condition.

But one day I saw him rubbing against the manger and guessed what was wrong. It was not easy to catch him for he was loose in a box stall and had never been tied up in his life. At last we snared him with a rope and fastened him to a post. We parted his hair and behold what a sight! There were whole battalions of "Bolshevik cooties" having a free lunch on his tender hide. Of course we did what most people would do in a case of that kind: We used the sheep dip over strength. It did its work well. There was a dreadful massacre. Then the skin began to come off in little scales and we saw that the solution had been too strong. Nevertheless the steer has been doing well ever since.

It is a good plan to take it for granted that all cattle need sheep dip in the spring and they need it *strictly according to directions*. If the solution is made too weak it isn't much use. If it is too strong it makes the skin sore. A second application should be made in about a week after the first to destroy the second hatching. It is surprising how easy it is to neglect giving them the second dose; in fact it is easy to neglect them entirely. Cattle lice are often harder on a farmer's profits than the income tax.

PLANTING POTATOES

EXPERIMENTS have been tried in different parts of Canada to determine the best time to plant potatoes for highest yields, and from these experiments and the experience of the best growers, the following dates are suggested as being the best:— Prince Edward Island, June 1-7; Nova Scotia, June 1-15; New Brunswick, June 1-15; Quebec, May 15 to June 15, depending on the part of the province; Ontario, May 1 to June 15, depending on what part of the province; Manitoba, May 10-15; Saskatchewan, May 10-24; Alberta, May 10-24; British Columbia, April 1 to May 15, depending on what part of the province. The tendency has been in most places in Canada to plant later than is desirable for highest yields. From results obtained, the following general recommendation is made:—

Where the spring is early and autumn frosts early, plant early. Where the spring is early and summers are dry, plant early. Where the spring is late and autumn frosts are late, early planting is not so important. Where the spring is early and autumn frosts are early, plant as soon as soil is dry enough.

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Send for sample copy

Wyecombe, Ont., Dec. 28, 1918.
MacLean's Magazine,
143-153 University Ave., Toronto, Ont.
Dear Sirs:—
Find enclosed Five Dollars for which kindly extend my subscription to MacLean's Magazine. Five Dollars' worth distributed along month by month as far as that amount of money will allow.
As to the magazine, I have taken it several years and like it better all the time. I like it better because IT IS better. Will you kindly send me the December, 1918, number as up to date have not received it; may have been lost in the rush before Xmas mail. Anyway, I feel I dare not or cannot afford to miss a single number. I am reading the stories, short and continued, and find them first-class, excellent.
To sit down with such a journal as MacLean's Magazine for an hour's reading after a hard day's work is rest indeed.
There are times when I am so busy (cheese and butter maker) that I merely glance at the daily papers as they come, but when MacLean's arrives it is a different story. It is like a man's "Tobacco Money"; he may be ever so hard up but there always seems a way to keep supplied with the "Weed" in some form or other; so with MacLean's—it makes no difference how busy I may be, there is time to read the bright little journal, and the cash to extend the subscription from time to time.
I am saying these things simply to let you know what at least one man thinks, although I know I am only one among thousands of your admirers. I do not so much believe in putting flowers on the grave as in giving them to the living to enjoy.
While I look upon MacLean's Magazine as a most excellent little journal, still I believe it can be improved as time and means will allow. I would like to see MacLean's take the same place in Canadian life as the Literary Digest does in the American.
While I take a delight in your stories, I feel that after your Editorials, the "Review of Reviews" is the magazine's strongest feature.
In asking your pardon for writing such a long letter, I will close, wishing MacLean's, its editor and staff a very Presperous and Happy New Year.
Sincerely Yours,
CHAS. E. BINGLEMAN.
Wyecombe, Ont.

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Good Management, Indoors and Out

Some Things That Save Woman's Nerves

By GERALDINE W. DICKIE

ROBERT MURRAY on his hands and knees half under his self-binder in the middle of his biggest wheat field felt inclined to curse his luck. At the most critical moment on a fine harvest day, with two four-dollar-a-day harvest hands idle on the field, it was maddening for something to go wrong with the knotter.

Robert, though good with machinery, had no technical knowledge of it. He had spent a good hour under the reaper but was unable to detect the trouble. He rose presently, wiped the perspiration from his face with his tar-covered sheepskin glove, and looked round at the reclining figures of his two men as they were enjoying their pipes in the shade of a friendly stook. "Don't worry about the beastly thing, Bob," said Jack Brown casually. "It's too hot to work. I jump the job. I've had enough of it."

Murray did not get angry though tempted. What was the use? The season's experience with Jack Brown in close association had enabled him to size up the man, and he expected little from him now. But the grain was over-ripe, and only by the utmost persuasion could he prevail on him to work one week longer. There was no time for delay. He looked at the disabled reaper, the waiting horses, the idle men and bit his lip.

"Somebody will have to go to Hampton and bring out Fleming. Will you go, Jack?" This was a different proposition. A drive to town with a smart team, in a covered rig with the possibility of a few drinks allured him.

"Oh, yes—don't mind. Shall I bring Fleming back with me?"

"Yes—of course, Fleming or some machinist, and make the trip in the least time possible, and in the meantime I will call over neighbor Heck and get his advice. It may be something quite simple."

"Won't to-morrow do?" asked Jack. "You're a slave-driver, don't you know?" said Jack as he leisurely filled his pipe.

"No, it won't. Get up, you lazy lout, and go get the rig and yourself ready while Tom brings the team from the meadow."

"In this swelter of heat?"

"Yes, and even this, I warrant, will not be as hot as the drink you will take to cool off. Mind I expect you back in two hours or no pay for this half-day. When the Boss returns to-morrow from his department at Ottawa, he will expect the wheat to be all harvested and I am here to see that it is done."

"This is your programme—Get to Hampton as fast as you can and bring back the man." Like as not he will come back drunk, thought Murray, but I cannot afford the time myself, and I will slip over and get neighbor Heck, and it is just possible we can get the reaper going.

Hon. Mr. Charles depends on me to manage his farm, and get his big crop cut and harvested, so I will not fail him. He will see his acres reaped when he returns.

The following day brought Mr. Charles to his Western home on the Prairie late in the afternoon. A couple of neighbors up the line waited on him for a short interview relative to their Union and with a hearty handshake and the expressed hope that the Farmers' Club would get all matters relative to their interests ready to present at the next session of the House, he withdrew to the comfortable living-room of his house. From the windows he could see his farm stretch to the south and east, and with satisfaction note that the harvest was gathered awaiting the threshing.

"I say, Margaret—that man Murray is as good as gold every time. No shirk about him. I see everything is done as well as if I had been here to oversee myself."

"Oh, yes he is systematic and has carefully looked after everything," rejoined Mrs. Charles.

Seated in the comfortable Chesterfield by his wife it had long been his custom to scan the pages of his political papers, while she, ever diligent with her sewing or knitting, listened for a random remark on the current news of the day. Occasionally some household topic or prospective work about the farm was discussed.

His absence from the home for several weeks had given his wife added work and extra responsibility. This additional task she did not consider a burden, for were not her husband's interests hers, and it was a joy on his return to narrate the incidents of success in the common round of daily tasks and receive his commendations.

"Since you have been away, Hugh," said his wife, "I have been thinking over some of our methods, and I am not so sure but we can improve. At least it does not seem plain to me. Can you tell me why it is that some people with good training and general ability have to work so awfully hard and only get quite ordinary results—the subordinate positions in life, and no considerable amount of riches accumulated, while others, who don't seem to know any more, or even as much, manage to get to the top of things? Is it luck, or selfishness, or character?"

"It is largely a difference in executive ability, I believe," said Mr. Charles.

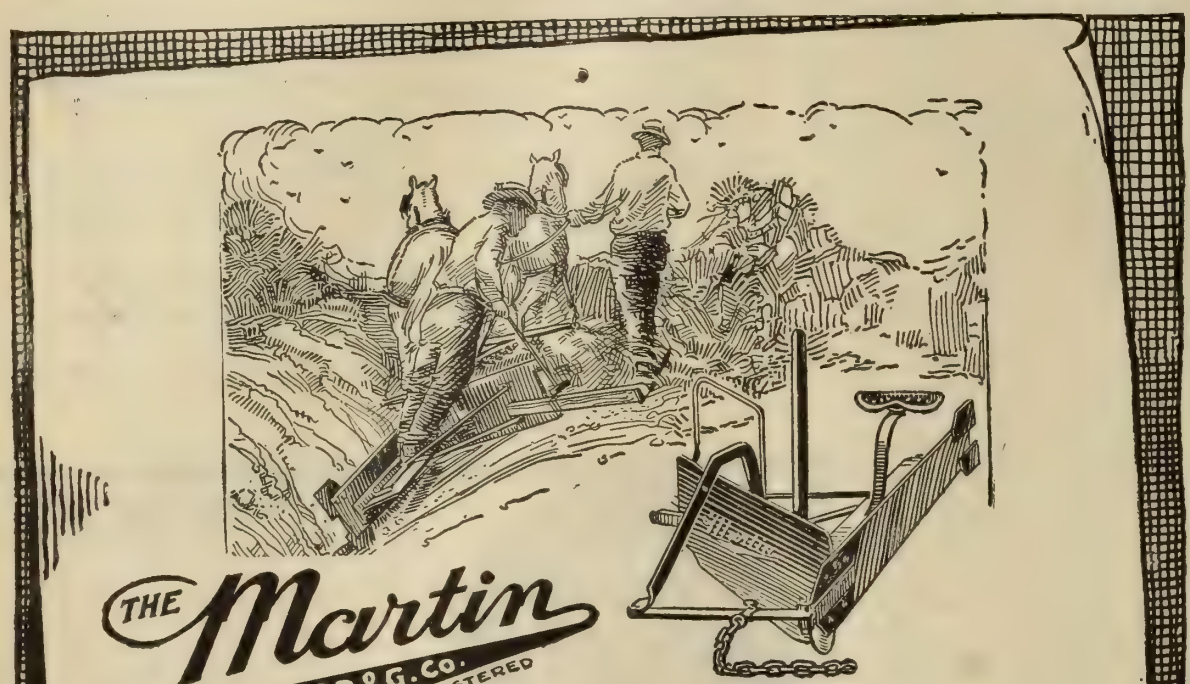
"Both know how to do the same thing well, but the one knows how to get good, work out of those under him, while the other exhausts his strength attending to all the details himself. He sacrifices vision to thoroughness, while the abler man obtains his results through others."

"But it doesn't seem fair. The man who has the skill to do things ought to be more successful than the one who merely gets some one else to do them for him."

"Perhaps, but it takes real brains to command, you must remember, as well as do. And the man who has to carry out every detail himself, who can't teach others how to do it, or who can't turn to his own ends other people's energies and methods doesn't succeed in modern life."

"I believe a lot of women are like that. I don't know but I am myself. It seems to me that when anything in the house goes wrong I have to pitch in and see to it in addition to all the regular tasks I have to do. I know I have lots of energy, but sometimes I want badly to stop and sit down. And I can't—the wheels won't go round."

"Yes they would," remarked the husband, "if you would put some of that energy into greasing them instead of turning them by hand, so to speak. The



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Flowers in the gardens of a Pickering home.

trouble with all you women is that you have never grasped the meaning of good management.

Most people learn more by experience than by advice. Give him the benefit of your knowledge, but let him work out his own methods if he can.

"In the Government service for instance we can't pick or choose our subordinates as a business man can, or discharge them as we wish. It's the man who uses what material he has among his assistants and develops their talents for his own needs who has the best office, and shows the greatest executive ability. It's the power to get things done, and get them done right—not doing them ourselves — that constitutes efficient management."

Mrs. Charles was quite astonished at her husband's remarks. He is ordinarily a meek man at home, though bristling with efficiency in his office, and her vanity was a little piqued, too, for she prided herself on her housekeeping, on her self-sacrificing motherhood, and she did not think that his attack was quite justified.

"People do say that I spoil my servants," she said timidly. "Perhaps I do!"

"Indeed you do," he responded with some heat, "and your children and your husband and your friends. You would do anything for anybody—and you are used up and tired all the time. You never have time to have any fun with me, or go anywhere, or to read and keep up with current doings. The children are getting selfish and imperious in their demands on you. They let you put away their belongings, and sew for them, and run errands for them—and what do they ever do for you?"

"Why," she protested, "I love to do things for my dear ones!"

"But you don't take time to get anything out of life for yourself. Perhaps waiting on the children is not the best thing you could do for the family, anyway."

For a long time she thought over all her husband had said. "He was entirely right," said she, "instead of training my children to habits of orderliness and helpful observation and to share the necessary labor which each of us entail, I am doing it for them. Instead of insisting that my servant keep the house and cooking utensils clean, I am apt to slip in and make up for her deficiencies myself. Instead of providing some little tasks suited to the failing strength of Grandmother, I took everything out of her hands because she was slow, and the result was she had no employment except meddling with the children, and the help, and with my affairs generally. Instead of paying an occasional seamstress, and saving precious energy, to put it forth in establishing a beautiful home atmosphere when we were all gathered together, I was often guilty of long days of feverish sewing, which left me nervous, snappy and dispirited by nighttime, merely because I preferred my own handiwork—loved the craftsmanship of it. As I see it all now, in spite of saving a few dollars by my labor, I lost infinitely more of something we could never get back.

"To my neighbors and friends our household was remarkably smooth-running, clean and orderly. It was my chief concern that this be so. Beneath the surface, however, we seemed to be all pulling away from each other. The cement that should have bound us close as one family was apparently missing, due to my never-failing vigilance against dirt and disorder. Nobody was interested in what anyone else was doing. The children got all they could get out of us, and then went elsewhere to find some satisfaction in life. Father spent his free time nodding over his paper or book, which I hadn't time for. I kept my mending basket always at my side, a symbol of perpetual slavery. We never discussed ideas, because no one but father had any.

"This day a vision of all this drudgery came to my awakened sense of right living, and I began gradually to change many things. The children are too deeply grounded in their careless ways to reform in a day or two. But by saving my physical strength more I find I have more moral energy to combat their occasional failures, and I try to resist the temptation of doing everything myself just because I think I can do it much better or quicker. Once during a discussion of best methods, father and our oldest son agreed to keep the cellar and garden in better order. One daughter gets up an hour earlier to dust and "redd up" the living room before breakfast. The other strips the beds and airs them, and puts the bathroom in order. All the children are keeping their own rooms tidy and their shoes and clothes brushed. Bridget, thus relieved of many miscellaneous tasks, seems to do better at cleaning. We have adopted a kitchen-timetable for her, and the children are not allowed to interrupt it to satisfy their whims. I have arranged also for Grandmother's mending. It is still slow, but strong and good enough for romping boys and girls. And I am taking the sewing time for reading and resting and thinking up fun in which all the family can join after supper and on holidays.

"It it quite simple, now we have started. I wonder we never thought of it before. Curiously, too, everyone is happier having more to do. The restless and quarrelsome spirit among the children has vanished. For several days when Bridget was sick the children helped me with the work, and did it well, and my oldest daughter suggested that after a while we will not need Bridget. She wants me to teach her to cook. And my husband—he is the biggest fun-maker of them all!"

"I feel ten years younger, Mother," he said the other night, "since you learned how to get things done instead of doing them all yourself. "You've had time to play with me. Every man is a great boy at heart. I am even ready to accompany you to the polls as soon as they will let you go."

Suffrage was an old joke with us. I

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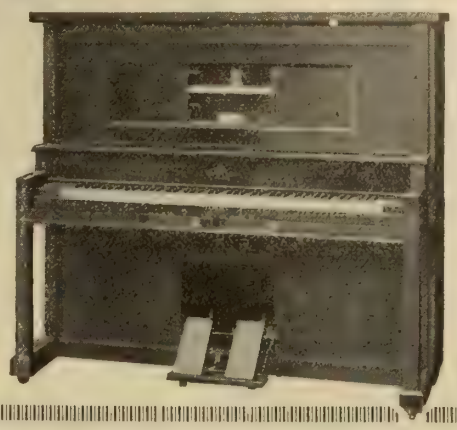

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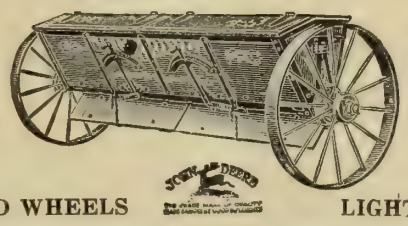


DOUBLE FEEDING MECHANISM

LARGE GROUND WHEELS LIGHT DRAFT

THIS MACHINE WILL HANDLE ANY STANDARD FERTILIZER IN ANY QUANTITY, FROM 150 TO 8,000 LBS. PER ACRE

STRONG - DURABLE - EFFICIENT

THE GREAT VALUE OF COMMERCIAL FERTILIZER IS OBTAINED BY USING A MACHINE WHICH ASSURES UNIFORM DISTRIBUTION. SEE YOUR NEAREST JOHN DEERE DEALER, OR WRITE FOR ILLUSTRATED FOLDER TO—

JOHN DEERE MANUFACTURING CO., LTD.
WELLAND - - ONTARIO

NATIONAL MOTOR TRUCKS

HAULAGE—An Important Question for Every Manufacturer to Consider.

Haulage is a vital feature of manufacturing efficiency. It affects production, deliveries, satisfaction of customers—and PROFITS. Have YOU ever thoughtfully studied the possibilities of increasing the efficiency of YOUR plant by using one or more National Motor Trucks?

Consider the possibilities of always-on-time deliveries of important orders. Think of the go-get-it ability of National Motor Trucks when you lack certain supplies to complete work in hand.

In this regard alone a fleet of National Trucks might easily pay for themselves in a few trips. Then think of the day-in-and-day-out haulage that must be done in the course of your business, regardless of railroad or mater.al conditions.

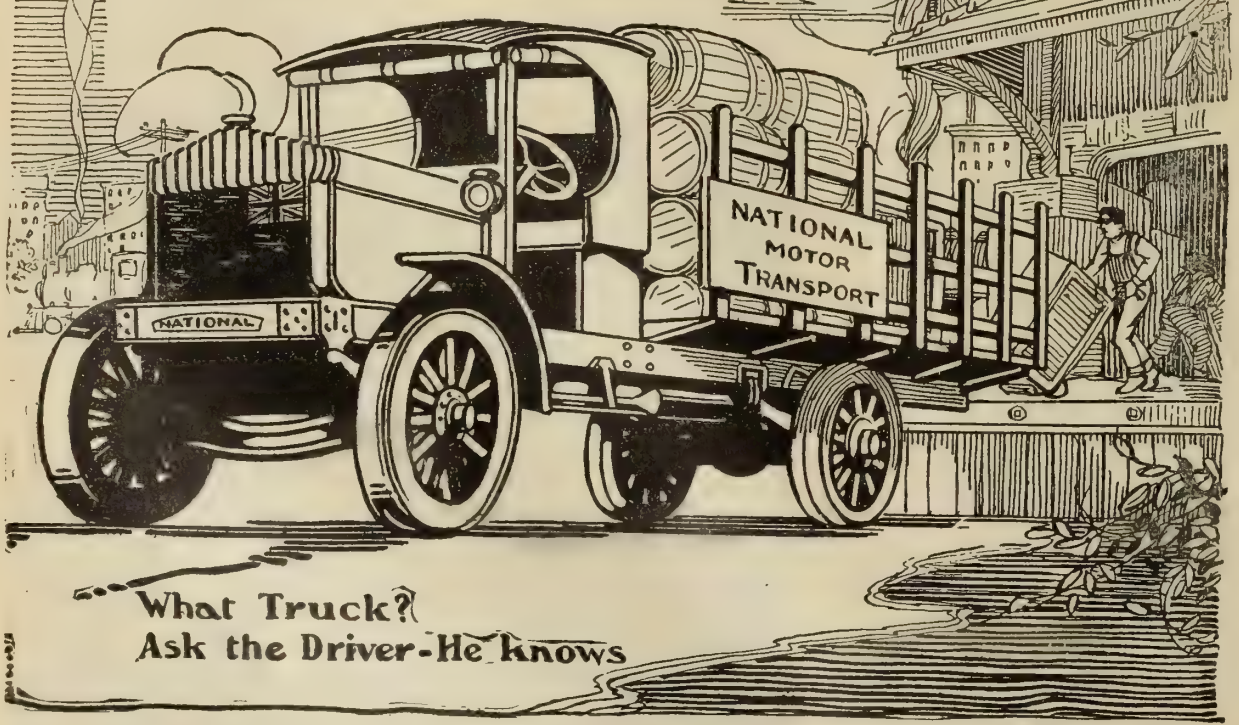
Think of National Motor Trucks not from the expense standpoint, but from the INVESTMENT standpoint. Ask yourself THIS question: Can I invest $2,000, $3,000, $5,000, $10,000 in National Trucks and make the investment provide its own sinking fund, pay me liberal interest, and increase my business?

We will be glad to study your haulage problem carefully and give you an unbiased answer as to whether or not you can use National Trucks to advantage. If the facts show that you cannot profitably use National Motor Trucks, we'd rather not sell them to you.

National Motor Trucks are Built in Canada for Canadian conditions. Six sizes—1 ton, 1½ ton, 2 ton, 3½ ton 5 ton trucks and 6 ton tractors. See them at our dealers or write for illustrated catalogue.

NATIONAL STEEL CAR CO., Limited
Hamilton, - Canada.

Write for illustrated catalogue and name of the nearest National Dealer



had always regarded the question with a kind of virtuous impatience, while father pretended I was keen to vote.

"I don't know about that yet," I laughed. "But I've been reading a lot about laws needed to care for the feeble-minded in our Dominion, and also about child labor outrages—little boys and girls being allowed to work in factories, and then there is need of laws prohibiting the forming of the nicotine habit. These needs appeal to attention too."

NITRATE OF SODA FOR FERTILIZER

NITRATE of soda, also known as Chile Saltpetre, as found on the fertilizer markets of the world, is the crystallized and purified product from extensive deposits of the crude nitrate, occuring in Chile, South America, whence it is shipped in 200-pound bags. This product is about 95 per cent. pure and contains between 15 and 16 per cent. of nitrogen, the element to which this material owes its fertilizing value.

Nitrate of soda is the most important and the most widely used of all nitrogenous fertilizers, chiefly for the reason that its nitrogen is directly and immediately available to growing crops. Since it has not to undergo any preliminary or preparatory changes in the soil, it is in a class by itself as regards efficiency and quickness of action; all other nitrogenous fertilizers, with the exception of nitrate of lime, (which is not on the market), must pass through some process of conversion in the soil before they are utilizable by crops.

Its Application

From the fact that nitrate of soda is readily soluble and its nitrogen immediately available, this fertilizer, as a rule, is most economically employed as a top dressing to the growing crop during the earlier weeks of growth. A portion of the application may, however, be given at the time of seeding without danger of any appreciable loss through leaching, the remainder being subsequently applied in one or more dressings to the crop.

In dressing the growing crop, broadcasting the nitrate should be done on a dry day, to avoid scorching the foliage. The application per acre per annum may be from 100 to 400 pounds, the heavier dressing being used in market gardening and other intensive forms of farming, as in potato growing. For the ordinary farm crop on soils of average fertility, 100 to 250 pounds per acre probably represents the limits of profitable application.

If one-half of the application, say 75 pounds per acre, is broadcasted and harrowed in at the time of seeding, the remaining half may be given as a top-dressing about two weeks after the crop appears above the soil. Or the first application may be made as soon as growth appears and a second some two or three weeks later. A single application should not exceed 100 pounds per acre. As far as may be practicable, it is well to conform to the practice of small and frequent dressings during the earlier weeks of growth, according to the crop's ability to utilize nitrogen. By this means loss through leaching will be reduced to a minimum.

Rate Suggested for Various Crops

	Lbs. per acre
For grain crops	75 to 150
For hay and pastures	100 to 200
For corn (fodder) and turnips	100 to 200
For mangels, sugar beets, etc.	150 to 300
For potatoes	200 to 300
For cabbage and similar leafy crops	200 to 400

Clover, alfalfa, peas and beans though "nitrogen-gatherers" when well established frequently respond profitably to a small quantity of nitrate of soda applied during the initial stages of growth.

The amount that can profitably be employed will naturally be determined in a large measure by the character of the soil, the smaller dressings sufficing on liberally manured land.

As a supplement to low-grade mixed fertilizers, containing only say one per cent. of nitrogen, as well as to purely phosphatic fertilizers, such as superphosphate and basic slag, the use of nitrate of soda will usually be found profitable.

SALES AND WANTS

THE FARMER'S EXCHANGE — Five Cents a Word—Per Insertion — SEMI-MONTHLY

CYPHERS WYCKOFF BRED TO LAY S.C. White Leghorns. Baby chicks $23.00 per 100. Safe arrival guaranteed. Hatching eggs, $10.00 per 100. Descriptive catalogue free. Cooksville Poultry Farm, Cooksville, Ont. (Apr. 15)

MAPLE SYRUP

WANTED — PURE NO. 1 MAPLE syrup. Write stating the price. Box 20, Farmers' Magazine, 143 University Ave., Toronto.

SAVE BIG MONEY ON LUMBER — Write to-day for our "Mill-direct-to-User" prices before ordering elsewhere. Satisfaction guaranteed or money back. Shipped anywhere. Davies Construction Company, Vancouver, B.C. (Nov. 15, 19)

MAKE FARMS BEAUTIFUL

By Wood Burn

Of things beautiful there are many opinions as to which is the most beautiful. But to most people the home appeals largely as the place that should be beautiful. In a great many instances on our farms we do not consider the things that are more beautiful than the works of man's hands. Now as we are about to start on another season of the year we will see nature bursting forth in full bloom with all her tints of green and some of the most beautiful hues, as it is said, of the lilies. Yet we farmers become discontented, tired of hard work, would like to sell out, go to town, take life easy! Quite so! But when we get to town or city what do we find? Town life seems just fine for a couple of weeks. But to our surprise there are no cattle to feed, no poultry to look after and no green fields of grain to watch growing from day to day. Presently we find ourselves all out of place, nothing to do.

Why not stay on the farm? There is no more pleasant place to retire. Hire the help to do the heavy work and one can make enough out of the average farm to pay all help, provide a living and have something to make home beautiful besides.

It is a fact that many farmers go to town who have spent all their days on a farm and in a short time return with a very poor recommendation for town life. Undoubtedly the town is an ideal place for anyone who can enjoy town life. But the farmer who is full of farming energy should stay on the farm and make it into his ideal beautiful home.

DISTRIBUTE SOLDIERS THROUGH SETTLED DISTRICTS

By W. D. Albright

The more fully the subject is considered, the more desirable it appears that the best interests of our soldier settlers will be served not by locating them in solid blocks, but by distributing them throughout existing and partially developed neighborhoods. From a business standpoint, merely, most of the men would be better off to buy patented land in settled districts than to take hold of scrubby crown lands. Veterans who have been through the mill of pioneering agree thoroughly on this point. But that is not all. Socially they would be much better off and of greater advantage to the community, if prinkled through existing settlements than if set down in groups under raw new conditions, with a large percentage of single men probably composing the communities. The bush lands will all be taken up in time, but the logical development is for settlement to creep into them from prairie districts as "nuclei." Block settlement in the bush would be something like a penitentiary job for many a deserving lad. Is it necessary? In the District of Grande Prairie are hundreds upon hundreds of quarters homesteaded or "scripped" and then left idle or worked to but a slight extent by men who are landpoor, or otherwise handicapped. Why not employ such land for soldier settlement? It would be good both for the boys and for the country. These quarters are available now and their value can be definitely ascertained from neighbors, even in the winter.

SPRAYING IS CHEAP AND PAYS

By S. P. Nanton

THE use of insecticides to protect the nation's crops from destruction by insects is a comparatively recent development, and even to-day few people outside of those actively engaged in the manufacture, distribution, and use, realize the vital part insecticides play, not only in saving agricultural produce, but also in actually increasing the quantity of it. The experts of the Dominion Department of Agriculture estimate that Canada suffers from the ravages of insect pests an annual loss of one hundred million dollars, all of which would be preventable by proper spraying with insecticides and fungicides. As an example of the increased yield to be obtained by spraying, the Department of Agriculture is authority for the statement that spraying increases the quantity of apples by at least 80 per cent., and the value per barrel of the average run of the tree by 70 per cent. In contrast with this greatly increased financial return, is the fact that the cost of making four spraying of the orchard per season amounts to but 16 cents per barrel of apples produced.

PROTECTION is today the keynote of international trade preparations.

GREAT BRITAIN is restricting imports and PROTECTING home industries

Acting Premier Watt of AUSTRALIA announces the introduction of a measure for higher PROTECTIVE duties.

FRANCE is exercising Government control of imports to build up home manufactures and home markets

ITALY'S after-war programme calls for a higher PROTECTIVE tariff.

A higher tariff for the UNITED STATES is forecast by Chairman Fordney of the Ways and Means Committee of the next United States Congress, who will be the author of the new tariff bill. Congressman Gillett, of Massachusetts, who will be the Speaker of the House of Representatives in the new Congress, says, "at the earliest opportunity there should be passed by the Republicans of the House a protective tariff measure which will provide more abundant revenue and prevent an inundation of foreign goods produced by cheaper labor."

GERMANY depends on PROTECTION to recover its commercial position.

Under PROTECTION, CANADA has successfully borne the burden of four and a half years of war. Wages have been high and agriculture and industry have prospered. The present is no time for economic experiments

Under Free Trade—where will the Revenue come from?

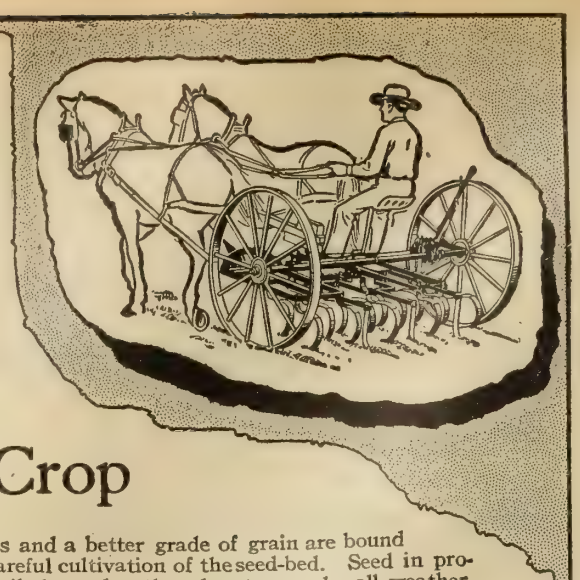
Canadian Reconstruction Association

WESTERN OFFICE
510-11 Electric Railway Chambers, Winnipeg

HEAD OFFICE
Royal Bank Bldg., Toronto

EASTERN OFFICE
603-4 Drummond Bldg., Montreal

Help Your Seed Make a Big Crop



LARGER crops and a better grade of grain are bound to follow careful cultivation of the seed-bed. Seed in properly cultivated soil always has the advantage under all weather conditions. Give the crop a right start and prepare the seed-bed properly with a

Peter Hamilton Spring Tooth Cultivator

Each tooth in the three rows can be set to cultivate exactly to the same depth and stay there under the severest conditions of work. This is only possible with the Peter Hamilton Cultivator and is because the front rows and back rows of teeth are attached to independent sections.

The sections and frame are extraordinarily strong and rigid and the hardest kind of ground is worked up with ease.

The exceedingly strong construction of the Peter Hamilton Spring Tooth Cultivator and the many adjustments that can be made gives a most reliable implement for use on the average farm. It works up the soil quickly to a smooth, mellow seed-bed just in the right condition for good seeding.

For exterminating weeds this cultivator is essential, and for this purpose extra wide steels can be provided to be used in place of the reversible points.

The High wheels, wide tires and perfect balance help to make this cultivator a pleasure to operate.

Write now for further information.

The Peter Hamilton Co., Ltd.

Peterboro, Ontario 45

6 STALKS ONLY

Mention this Paper when you write us as there are some that object to your knowing the TRUTH ABOUT OUR PRODUCTS.

Sweepstakes Pedigree Corn Seed

(Copyright, 1915)

YOU HAD BETTER KNOW THE TRUTH about this wonderful SEED CORN and our other SEEDS and SEED GRAINS before sending your order for your needs for this season to anyone.

GRAND CHAMPION and SWEEPSTAKES (Brands)

SEEDS

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Are our Exclusive Property and this advertisement is to inform the Public THAT: Any one using either of these names without authority from us or without A CERTIFICATE OF AGENCY signed by us, in the advertising of SEED PRODUCTS or vending same in any manner is an Impostor and is liable to prosecution under the Copyright Law as well as anyone who aids or abets such infringement of our rights.

THERE ARE HUNDREDS OF RELIABLE DEALERS AND THOUSANDS OF FARMERS Handling and Planting Our SEEDS and SEED CORN

This cut introduces to you MR. H. B. HUBBARD, who is one of the PIONEER SEED DEALERS of New York State, and to him as well as the FARMERS near and far in Cortland County there is nothing like SWEEPSTAKES. 25 TONS SILAGE PER ACRE. Planted May 25, 6 in. high July 1; 14 ft. high Aug. 20 and eared. Sept. 11, ready for SILO CUTTING; Sept. 19, cut for HUSKING.

2 YIELDS Silage 29 tons. Husked Corn, 175 bus. per acre. (Some fully matured for seed.)

We have other evidence of worth.

We have prepared for this.

WRITE FOR FURTHER INFORMATION.

International Consolidated Record Assn., Inc., Elmira, N.Y.

We have prepared an ALBUM OF PHOTO PLATES SHOWING ONE PRODUCT as grown in the State of New York and which we will send on receipt of $1 Post Paid. We will credit this on your first order for SEED CORN, 10 Bus. or over. When you get this ALBUM you will have the facts before you.

WHEN THE FARMER GROWS SWEEPSTAKES HE HAS THE FACTS WHEN HE FEEDS IT

FRUIT GROWING

Black Canker and Other Rots

By WILLIAM HARKNESS

Black Rot Canker

THIS disease is often called Black Rot, Leaf Spot, and Apple Tree Canker.

This, probably the disease second in seriousness to the apple grower, is injurious to all parts of the tree, trunk, branches, twigs, leaves and fruit.

Black Rot is first noticeable on the fruit as a small brown spot, which grows larger and becomes black. This black diseased area is covered by little black protrusions. It may occur on the leaves shortly after they open as a purplish speck, later growing larger and becoming yellowish brown in color.

It occurs quite frequently on larger limbs where it discolors the bark, finally forming cankers. These may spread out from the point of infection until they girdle the branch and thus kill it; or they may spread into the trunk, in which case it is quite often girdled and the whole tree killed.

As the spores of this disease can only enter the tree through wounds, precaution should be taken to prevent such wounds as are caused by cultivators, breaking limbs, or any other way that can be easily avoided.

When large wounds must be made in pruning or in cutting out areas already diseased, the wounds should be washed with concentrated lime-sulphur (same strength as that used in the first spray), and then painted over with white lead.

If the spraying is done as directed for the apple scab, as given in the April 1st issue of "Farmers'", it assists a great deal in keeping the Black Rot in check.

Pear Blight

This is sometimes known as Blight, Fire Blight, Blossom Blight, is a disease of apples, pears and quince. Although all varieties are not seriously susceptible to this disease, all are affected to a certain degree.

Of those varieties affected most, some of the common apples are Snow, Yellow Transparent, Golden Russet, Greening and King; of pears, Bartlett and Flemish Beauty.

Early in June the ends of the branches bearing blossoms may begin to have their leaves turn black or brown. At times a tree may be covered with these twigs, plainly shown by the black or brown leaves hanging to them. As the summer progresses the course of the disease down through the branches can be followed by watching the leaves turn black on the area being infected.

Sometimes the trunk itself is infected in this way, or by the disease growing down an infected shoot or sucker, or directly, by insects carrying the disease organisms into a wound in the trunk. In any case, a canker is formed on the tree. This canker produces a gummy substance which is full of disease organisms. These are carried away by insects, and in this way spread the disease from tree to tree.

The fruit may become diseased at any time during its growing season, in which event it invariably dies.

The disease is caused by a bacteria which lives on the sap of the tree, thus robbing the diseased part of nourishment and causing its death. In weather which produces a great sap flow the bacilli multiply very rapidly; while in dry weather, in which the sap flow is small, the bacilli may die, being practically starved to death. As some insects are very fond of the gummy substance, they get the bacilli on their feet and bodies and carry it to other trees which they infect.

C. W. BAXTER
Dominion Fruit Commissioner

The first step in the control of this disease must be taken sometime during the winter, when all infected branches must be cut off at least 8 inches below the lowest spot where the disease can be seen. If the larger branches or trunk are infected, the diseased area can often be cut away with a drawknife or even a good pruning knife, in which case all of the dead area must be removed.

In order to destroy any new or overlooked sources of infection before the insects get an opportunity to spread it, the orchard should be inspected again in April and diseased parts cut out.

The brush should be burned soon after pruning. Between each cut the pruning knife should be disinfected with corrosive sublimate (poisonous if taken internally), about 1 part to 1,000 parts of water. All wounds where disease is cut away should be disinfected and painted.

Pink Rot

This is a storage disease, attacking chiefly scabby apples which have been picked in damp weather, or stored in a damp place. The varieties, Rhode Island Greening, Pippin and Snow are particularly susceptible.

A whitish mould with a pinkish tinge is formed around the scab. This later becomes brown, sunken, bitter and rotten, finally spoiling the apple.

As the fungus cannot penetrate the sound skin of healthy fruit, care should be taken in picking and packing not to break the skin. The apples should be dry before storing them, and then they should be stored in a dry place. Fruit with any mould on it should never be stored. If the spraying for scab is carried out carefully, Pink Rot is reduced to a minimum.

Sooty Blotch and Fly Speck

This is a minor disease found mostly on Baldwin and Spy. It is not detrimental to the quality of the apples, but makes a blemish on them, thus lowering the selling price.

As moisture increases the amount of this disease, the trees should be pruned to let in an abundant supply of air and light. If the directions for spraying are carried out, in addition to the pruning, there will be very little of this disease.

BRITISH COLUMBIA LOGANBERRIES

By John Pawtuckaway

WHEN immense breweries in the North Pacific territory of the United States were rendered apparently nearly worthless by prohibition, the loganberry, previously practically unknown except on the Pacific slope, stepped in, and as the source of a soft drink soon to be distributed all over the United States, saved the situation. Prior to this epochal happening, there had been a period when the loganberry —a small-fruit developed out of the raspberry and the blackberry by Luther Burbank and others—had experienced dreary days, plantings apparently overshadowing the market. But the loganberry quickly came into its own. A big berry, measuring up to 1½ inches long, it is impregnated with rich juice. It is produced in enormous quantities for jam, drying, syrup, preserve, and various beverages. It is easily grown and fruits abundantly.

It is a safe prediction that loganberries will become an important small fruit crop in British Columbia, too. There should be a big Canadian market for loganberry juice, bottled in British Columbia from British Columbia berries, for jam and other products. In the Fraser Valley, loganberries have been raised for quite a number of years, yet mostly in a small way. It is generally understood taht the experiment has been entirely successful.

K. W. Munson, the fruit inspector at Chilliwack, who performed such valuable public work with small fruits last year, believes the Fraser Valley to be eminently suited to loganberry culture. He did very well with it himself last season.

"Almost any soil will suit it, if looked after," he stated. "The brambles love humus and fertilizer. Propagation is found to be best made by covering the tips of the canes with soil in late summer, and two-year-old plants fruit best. It is well suited for garden walls and fences, and should be set 12 feet apart. For commercial griwing set the plants 8 feet at least apart ,and on the square system. Work the plants to throw deep roots. Keep land clean and well tilled. In the bearing season mulch every ten days with good, old manure, with a loose 3 or 4 inches.

"Intercropping may be done without injury for plants up to two years, and the new canes are the fruiting wiod for next year.

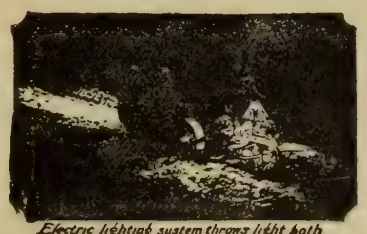
"A good plan is to set posts north and south, 32 feet apart and 7 feet high, with No. 12 wires 3, 4, 5 feet respectively from the ground. The second year do not leave more than three leaders on; and the third year only eight or nine, even these being cut back to 8 or 10 feeet long; working them four on each side of the post for fruiting purposes.

"In harvesting, clean up every two days, and keep the deep black red berries separate from the bright pink, for marketing. Careful handling is absolutely necessary, and the shallow pint crate should be used exclusively."

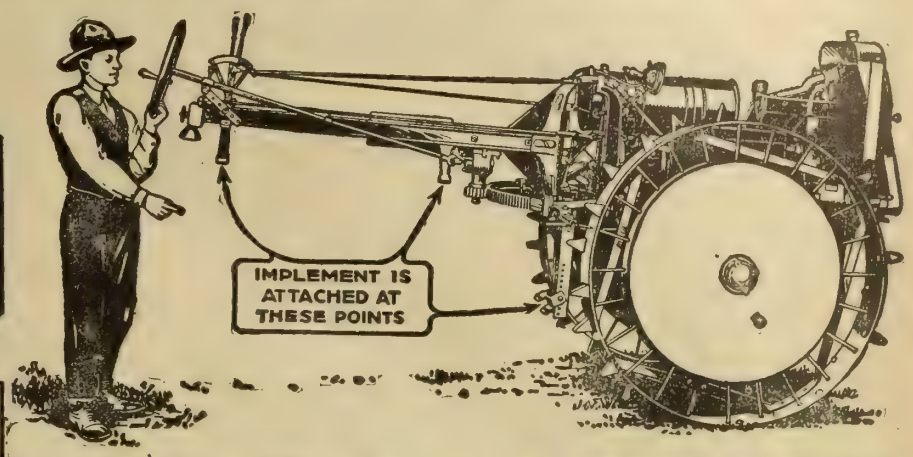
K. W. Munson knows whereof he speaks, as he has had extensive practical experience in leading fruit districts of Oregon and Washington. Influence of ocean currents on climate is such that there is a similarity in climate throughout this region, extending up into British Columbia, which an Easterner, acquainted with the difference in latitude, might not expect. The Fraser Valley has mild winters, moderate summers, heavy rainfalls. Its valley soils are black with humus.

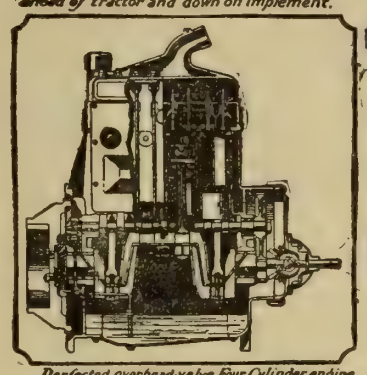
British Columbia expects much of its small fruit industries. It believes that the Canadian by-product concerns specializing in berries and tree fruits will eventually, and at no distant date, be centred in British Columbia.

No Other Tractor Has So Many Good Mechanical Features=



Electric lighting system throws light both ahead of tractor and down on implement.

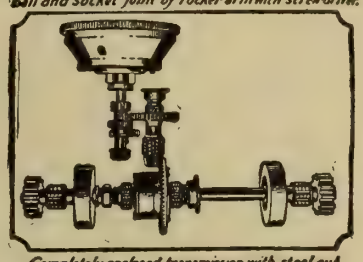




Perfected overhead-valve Four Cylinder engine, with force-feed oiling system under 35 lbs. pressure.

Diameter of connecting rod bearings 2½ in. compared to piston diameter of 3½ in. insuring long life.

Valves placed in perfect adjustment by turning down ball and socket joint of rocker arm with screw driver.



Completely enclosed transmission with steel cut gears, Hyatt bearings, differential lock, and brakes

MOLINE UNIVERSAL TRACTOR

It Solves The Farm Help Problem

EVERYONE who knows what a tractor should do, agrees that the Moline-Universal has three distinct advantages over all other tractors: lighter weight; greater economy and ease of operation; ability to do all farm work, including cultivating; and ONE-MAN control of both tractor and implement from the seat of the implement, where you have always sat, and where you must sit in order to do good work.

Aside from these distinct advantages which the two-wheel construction gives, the Moline-Universal Tractor, Model D, is still the best tractor on the market. In every detail it has been refined and perfected to the utmost limit of modern engineering knowledge.

Self Starter—Electric Lights

The Moline-Universal is the only tractor regularly equipped with a complete electrical starting, lighting, governing and ignition system. The starter saves many hours of productive work, besides eliminating back-breaking labor. Electric lights enable the tractor to be worked at night during rush seasons.

An electrical governor perfectly controls the engine speed. By simply turning a dial, within easy reach of the operator, engine manitains any speed from ½ to 3½ m. p. h., and automatically handles all changes in load.

Perfected Four-Cylinder Engine

The perfected four-cylinder engine is the latest development in overhead-valve construction. With a bore of only 3½ inches a 2½-inch crankshaft is used. The strength and thickness of the crankshaft eliminates all vibration. Oil is forced through hollow crankshaft to all the main and connecting rod bearings under a pressure of 35 pounds to the square inch. The bearings float on a film of oil, so their surfaces never touch.

Double valve springs give unusually quick action with soft seating. Rocket arms are swiveled on ball and socket joints that may be turned down with a screw driver, placing the valve mechanism in perfect adjustment at all times. This engine develops unusual power and is very economical in operation.

Steel Cut and Hardened Gears

The transmission is completely enclosed, with drop forged, hardened, and cut steel gears running in oil that reduce power loss to a minimum. All gears are mounted on heavy duty Hyatt roller bearings, with high grade ball bearings fitted with adjustable collars to take up end thrust. Fifteen Hyatt roller and five ball bearings are used in the Moline tractor. Seven splined shafts are used in locking gears to shafts. This is the strongest construction known, and has the additional advantage that it makes the transmission easy to take apart.

For pulling in soft ground, the two drive wheels can be made to revolve as one by means of a differential lock, doubling their pulling power.

Complete Enclosure of All Parts

The final drive is completely enclosed in dust tight shields, the edges of which are sealed by heavy grease used to lubricate the gears. Every part of the Moline-Universal tractor is protected against friction and wear.

All working parts are accessible. All the weight is so well balanced on two wheels that the rear end of the tractor can be supported with one hand.

The Moline-Universal Model D will give you longer and better service at less expense than any other tractor. It is built for positive reliability.

Our catalog describes the Moline-Universal in detail. Send for it. Address Department M.

Canadian Distributors

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Manufactured by Moline Plow Co. - - Moline, Ill.

GILSON SILO FILLERS

THE GILSON SILO FILLER is the one blower which can be successfully operated with as little power as 4 h.p. There is a Gilson Silo Filler for every purpose—for the individual farmer, for the syndicate, and our large capacity machine for the custom jobber.

We guarantee every Gilson Silo Filler to cut and elevate more ensilage with the same power than any other blower cutter.

Will Silo Filling Time find you ready?

Write for catalogue to-day.

Gilson Mfg. Co. Ltd.
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39

FIELD SEEDS

PINE TREE BRAND

TIMOTHY CLOVERS

ID

IT STANDS ALONE

THE ALBERT DICKINSON CO.

CHICAGO ILL

DETROIT — BUFFALO — BOSTON — MINNEAPOLIS

Massey-Harris

Plowing with Power

The Massey-Harris Power-Lift Tractor Plow is the product of a rich experience of over half a Century of Plow Building. Its entire construction is especially rigid and strong to stand the immense strain of Tractor Plowing, and it is fitted with Bottoms specially designed for plowing with power.

Two Levers within easy reach of the operator on the Engine regulate the depth of plowing. By simply pulling a rope the Power Lift operates to raise or lower the Plow as desired. The Hitch has wide range of adjustment both vertical and lateral, and being stiff permits the Plow being backed. When raised all Bottoms are at the same level, the rear being equally as high as the front, namely, 6 inches. A Hardwood Break Pin in the Hitch prevents breakage. The Third Bottom or Plow can be detached to convert a Three-Furrow into a Two-Furrow, or vice versa; it can also be attached to a Two-Furrow, thus making a Three-Furrow Plow.

The Ideal Plowing Outfit—
The Massey-Harris Tractor and Tractor Plow.

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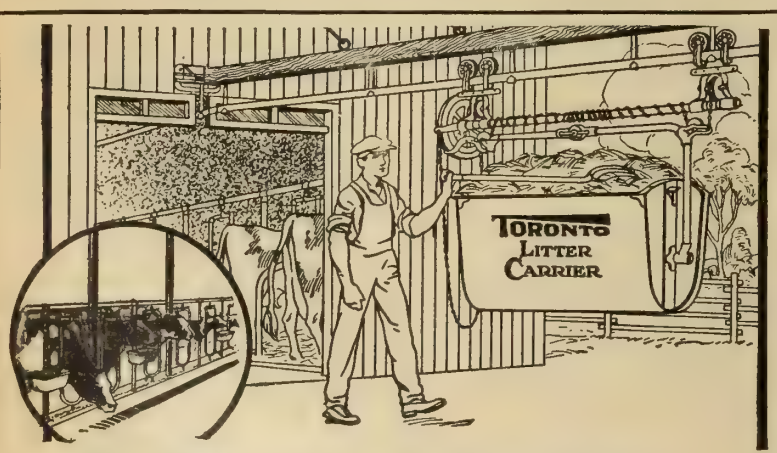

The Work of Six Men

A Toronto Litter Carrier will astonish you with the amount of work it does. Enables one man to clean the stables as fast as six men in the old way. Cuts out the dirty part of the job. Takes away the danger of the old wheelbarrow and the slippery plank. Encourages cleanliness in the stable—and that means healthier cattle.

All Toronto Stable Equipment is designed to save work and make cattle bigger profit producers. You'll find with this equipment that stable chores become easy. Time is saved. Cattle are contented.

A wide knowledge of proper stable equipment can be gained from a study of our big stable equipment book. This will be sent free if you ask for it. Write now.

ONTARIO WIND ENGINE & PUMP CO., Limited
Atlantic Ave., Toronto
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TORONTO

FARM ENGINEERING

Make Tractor Ratings Uniform

By J. McGREGOR SMITH

PRIOR to the introduction of the gasoline or kerosene tractor there was not much confusion about tractor ratings. While steam engines were underrated they were all underrated in about the same proportion. It seems that gas tractors have been in many cases overrated and cannot develop their advertised capacity for actual work on the belt or at the draw-bar. In some instances it is due to the fact that tractor companies get the motors from a plant making a specialty of this particular and vital apart, due consideration of the power lost in transmission to the belt or the draw-bar being omitted. From the farmer's standpoint it is highly desirable that tractor ratings should be placed on a rational, uniform and national basis which would be accurate and acceptable from coast to coast, and not different at every meridian line. The tractor interests would profit by conservative and uniform ratings. The practice of overrating is short-sighted. We emphasize the fact in case there may be doubters, that the reliable companies would be glad to fall in line and adopt any policy that could be mutually arranged A solution for many of our present troubles is offered in the remainder of this discussion.

We will suppose that a practical farmer is in the market for a tractor. He has studied the problem carefully. He has looked through a list of specifications of various tractors in a vain endeavor to decide which one is the right machine for him. We present below several of the specifications he may have selected regarding four makes that may appeal most strongly to him:

Rating	Plows recommended	Pounds pull at drawbar	Drawbar horsepower they should develop from figures given.
A 10-18	2	900	6 2-5
B 10-18	2	1800	11 1-5
C 10-20	8	1800	12
D 10-20	3	2650	14 2-15

The first two in the above list are in a class of 10-18, (meaning 10 horsepower at the drawbar and 18 at the belt), the last two are in a class of 10-20 engines. However, all four are advertised as 10 horsepower machines at the drawbar and they are all in one class. Let us examine each, and from the data given in their respective cases see what can be developed. We know that the drawbar horsepower equals the pull in pounds multiplied by the distance traveled in feet per minute and the product of these two factors divided by 33,000 (the number of foot pounds of work per minute in 1 horsepower). Stating it briefly we have:

Drawbar horsepower = pull in pounds $\times$ distance in feet per minute divided by 33,000.

Take tractor A in the list and work it out and you will find that:

Drawbar horsepower = 900 (pull in pounds) $\times$ 242 (2¾ miles per hour = 242 feet per minute) divided by 33,000 (one horsepower) and we get 6-3/5 drawbar horsepower. And it's rated as 10 drawbar horsepower. We have taken the advertised specifications. Something is wrong.

Now, if you will examine B, C and D in exactly the same way you will find that they respectively are able to develop 11.2, 12, and 14.4 drawbar horse power. In every instance they exceed their rating and therefore may be reasonably expected to give satisfaction.

If that does not mean chaos and confusion I would like to know what it does mean to the average man. You say, "Well, what are you going to do about it?" We would respectfully suggest that since tractors have been and are being sold in large numbers in this Western country that some uniform method of rating be adopted in the interests of the reliable manufacturer as well as the interests of the farmer.

We Must Co-operate

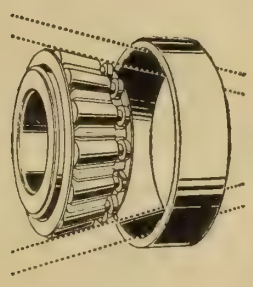
You may wonder why we include the manufacturer. They are willing and anxious to co-operate, and one needs go no farther than the record attendances at their instruction schools to realize this is true. Every province should provide equipment for testing tractors on the belt and at the drawbar. The majority probably have the necessary equipment now in the agricultural engineering departments of the agricultural colleges. The law governing the sale of tractors would demand that every type and every make of tractor be tested, and if the results of the test showed that it came up to its rating, then a stamp of approval or guarantee—call it what you like—would be attached to all contracts involving the sale of the said type and size of tractor. The plan is simple and would work as follows: The John Jones Company would notify the testing bureau that they wanted their 10-20 tractor tested. A qualified official would go down to the warehouse or car and select any engine at random, noting its serial number. The tractor would then be submitted for trial and approved or rejected as the case might be. In a test of this kind Tractor A in our list would receive no stamp of approval and would be placed in a class designating it as a 6 D.B.H.P. and why not? The other 3 machines, B, C, D, would pass and go in the market as approved, Government inspected 10-20 tractors. All other sizes would be dealt with in a similar way. Provincial laws would have to be uniform, in fact there should be one rating for Canada, or even North America. A company making an engine that could not come up to the standard would have 2 roads open to it, the first, to improve their machine, and the second, "to shuffle off this mortal coil." Much more might be written about the tests, but enough has been said for the present and there seems no reason why the details cannot be arranged to the mutual benefit of all. Something should be done.

How Many Plows? a Foolish Question

How many plows will the engine pull? You might just as well ask how long will it last? No matter how conscientious we are we cannot answer your question unless we know the soil conditions, etc. The solution in this case is to have the country charted according to the different kinds of soils. A 14 in. plow may require a pull of 200 or 1,600 pounds, depending upon the soil conditions. Plowing matches are held at many different places and they offer an opportunity for testing the pull required by the plows. Country agents could take the question into account in their rural survey work. It can be done. Then we would know when a man writes in from a certain district that since the average drawbar pull in breaking in that district is 700 pounds, that he could, with any 10 D.B.H.P. tractor in the list above, except the first, handle 2 14-in. plows with reasonable hope of success. There would be no hit or miss. There certainly would be fewer misses than we have under the present system.

The remarks of a recent writer on the tractor situation in the United States are very good: "There is no

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

"Take Up" instead of "Wear Out"

Suppose that valves couldn't be ground when they got leaky.

Suppose there wasn't any "spring" to piston rings.

Suppose bolts couldn't be tightened up after they worked loose.

Your truck, tractor or motor car would be mighty short lived if it were not for take-up at these and other points where wear goes on. Rattles and pounds would soon develop to tear the machine to pieces.

In the bearings which always have to stand a lot of hard knocks and heavy pressure, take-up is especially important. The take-up feature of the Timken Roller Bearing enables you to make a new bearing of it at the end of every season. All that's needed is a part turn of an adjusting nut or the removal of a shim.

Another important thing that Timken Taper does for the tractor, truck or passenger car, in wheels, differential, and other points of service, is to take end thrust just as well as downward load.

Because of Timken Taper, Timken steel and workmanship, Timken Bearings not only resist wear themselves, but they protect and extend the life of other important working parts of the machine. Learn more about Timken Taper in the booklet "Timken Bearings for Farm Tractors."

THE TIMKEN ROLLER BEARING COMPANY
Canton, Ohio.

"Built, Tested and GUARANTEED by a Reliable Old Canadian Company"

Many Time-tested and PROVEN Best Features of Farm Tractor Design

are combined in the

"MACDONALD"

12-24 KEROSENE TRACTOR

In the guaranteed Macdonald tractor the structural steel frame is so constructed that the big wheel drive is quickly interchangeable with the Flexible Wheel "Creeper" assembly at any time you want to change

The Macdonald 12-24 H.P. kerosene tractor easily pulls three 14-in. bottoms and handles a 28-in. thresher or biggest type silo filler. Powerful 4-cycle motor, 4¾-in. bore by 6-in. stroke. Friction drive transmission. Differential gear is housed in oil-tight case with easily-gotten-at sliding pinion to change for belt work.

Get your order in early. Write to-day for FREE literature giving full details and illustrations of mechanism.

THE MACDONALD THRESHER CO., LTD.

1000-1200 ONTARIO STREET EAST - STRATFORD, ONTARIO

Protect Axles and Traces

Imperial Mica Axle Grease

—smooths the axle spindle and hub socket by filling the tiny surface pores with powdered mica. The acid-free grease defeats friction. Makes axles last longer and loads easier to haul. Sold in sizes from 1 lb. to barrels.

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—keeps traces and harness straps pliable, soft and strong. Weatherproofs leather and keeps it from drying out and cracking. Sold in convenient sizes.

Imperial Eureka Harness Oiler

Makes harness oiling, quick, and thorough. Simple to operate and saves work.

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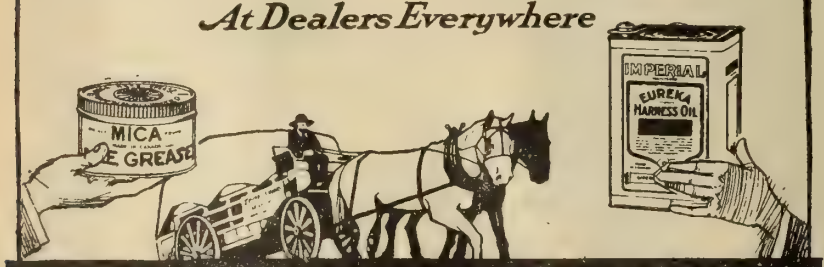

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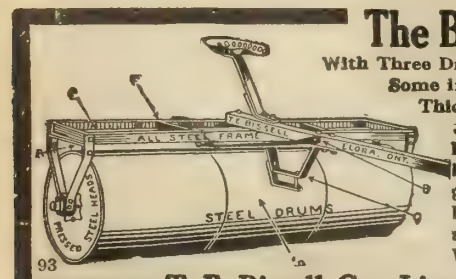
With Three Drums and Strong Rigid Steel Frame. Some improvements are: Heavy Steel Axle. Thick, Heavy Steel Plate, Drums Riveted, up to stand any strain, Roller Bearings Runs like a bird. Full particulars free by mail, or ask your dealer. None genuine without the name "BISSELL." Look out for it. This Roller will stand hard work and lots of it. Write Dept. Y for free catalogue



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T. E. Bissell Co., Limited, Elora, Ont.

We have doubled our factory capacity and are determined to supply our customers far and near. See advertisement also on page 60.

such thing as a best tractor any more than there is the best breed of hogs, or the best breed of cattle, or the best breed of dogs. The reason is perfectly obvious when one stops to ponder. If there were such things as a standard soil, a standard climate, a standard topography, and a standard type of operator, then we might be able to develop a standard best kind of tractor—moreover, one man takes a certain make of machine and does well. He is pleased with his results. Another man buys exactly the same make of machine, works it on a similar farm and makes a flat failure. Where should the blame or credit be applied—to the man or to the machine? In the case of failure we may blame the machine, but if we do, then we should also credit the success to the machine. Obviously, however, both the success and the failure were due to a combination of man and tractor. One may take his choice, but the evidence piles up that some men never fit into a machine combination."

In conclusion let us say that the scrub tractor should follow the scrub bull or the scrub stallion out of the country. They have been tested and turned down by an examining board because they did not come up to the approved standard. Therefore let us have all makes that are offered for sale tested and approved.

Let us buy from reliable companies who are in a position to render expert and repair service and whose tractors have proved their ability to do what is claimed for them. We look forward to such a step being taken as we have outlined, and feel sure that it would be a long step in the right direction. It would be the means of avoiding disputes, and there would be more satisfied tractor owners, although we have a large number at the present time. Plowing is "the peak load in agricultural work," and we need good machinery to carry this load.

What Agricultural Journals are Doing

By J. R. BLACK

IF, as has been said, the Agricultural College is often an unrecognized benefactor to farmers among farmers, the same would apply to the agricultural journal. The latter too, has had a struggle for its rightful place, but it has "gone over the top" and won a strong position, from which it is not likely to be driven.

To set forth all the benefits conferred on agriculture by the farm journal, would be a rather laborious undertaking, but a few of the more salient of these may be here stated:

The agricultural journal fills a place all its own, and serves its constituency, by printing in its pages the latest scientific discoveries relating to every branch of agriculture. The farmer is not left to the slow and often imperfect method of personal intercourse and spoken words in order to obtain the latest knowledge and chemical discoveries, or new seed, or improved treatment of the soil, or the most recent invention in agricultural machinery, or the latest advance in livestock breeding, or how to destroy fungus and other growths inimical to the maturing of his roots or grain crops. He can read it all in his farm journal.

And the more vividly to present the case recourse is had to pictorial representations. The draughtsman, photographer and engraver are called in and their finished work, scattered about among the letter-press, makes the subject at once more interesting and instructive. A process, or a natural object such as a prize animal, or an artificial product in the form of farm machinery, can be explained more quickly and intelligently by a picture than by a verbal description.

The information is not confined to the editorial page, or to the pages filled by outside contributions, clippings from other papers and correspondence, but it is also scattered throughout the spaces devoted to advertisements. For, in the latter section, though the instruction is imparted by means of paid advertisements, it is often of a valuable character to the reader. The manager of the farm paper exercises a most careful scrutiny over every advertisement which seeks through his columns to reach his readers. And anything of a fraudulent or even suspicious nature meets with short shrift at his hands. Besides, most men who have articles to sell are careful not to say of them, in an advertisement, what will not be found true in a personal inspection or in actual use.

The fact, too, that the farm journal is a medium by which farmers can keep in close touch with each other is of value, especially as there are necessarily spaces, more or less wide, separating them. As the farmer reads the contents of his journal weekly, semi-weekly, or monthly, he realizes that he is one of a large number in the same vocation, working for the same ends. Thus is the feeling of isolation gotten rid of, and in its place comes the sense of comradeship.

The farm journal is an effective agency in bringing individual farmers to co-operate with fellow farmers in securing a common good. One of the handicaps among agriculturists is the difficulty which their separate residences prevent to their getting together and working in unity. This difficulty has often been taken advantage of by others to the exploitation of the farmers. But a modern farm journal is always to the fore in advocating any measure of benefit to the farming community; showing what these benefits are, and how they may be attained. Much of the co-operation, which now happily exists, among the farmers of Canada, in political, social and fiscal matters, is the result of the persistent advocacy of the need of union among agriculturists to secure fair treatment at the hands of legislators, and in the markets where they buy and sell.

And the wideawake agricultural journalist does not end his labors when he has done all he could for the farmer and his owners: he enters the home and points out how better-living conditions may be had for its inmates, the lay-out of the house, the food of the family, the conveniencies in regard to water supply, the importance of cleanliness, and the facilities necessary to make these things actual—these and many other improvements are brought to the attention of the farm family in their home. Moreover, the immediate environment of the dwelling is discussed, its beautification urged, and the means of realization specified. There are now, in almost every part of Canada, homes whose interiors and exteriors appeal successfully to all who appreciate arrangements designed for comfort, and to please those who have an eye for beauty. And the existence of these homes may be taken, in many instances, as proof of the beneficent influence of the farm journal received and read by the family for years.

The farm journal exerts a salutary influence in its discussion of public men and measures, apart from political, partisan bias. The fact that the journal must derive its support from farmers, as subscribers, and from advertisers, regardless of their political affiliations, keeps it free from close alliance with any political party. That this is a benefit must be evident to all who are familiar with the trend of discussion of public questions, in purely political party organs; and who know of the difficulty which even candid readers experience in getting at the truth.

The farm journal is a valuable medium for the exchange of views between practical agriculturists. The space devoted to letters is often the most valuable of the journal's contents. In this department are discussed all kinds of subjects pertaining to the soil, seed, cultivation, animal husbandry and methods of operation.

Closely associated with the correspondence columns is the "information bureau," where questions are asked on many matters, and answers by experts are freely given.

The concentration of the farm journal on the one subject of agriculture is surely another benefit, when a journal whose primary object is the dissemination of news, or the advocacy of a certain political policy for partisan ends, devotes some of its space weekly to farmers' markets and the discussion of farm subjects, the space is, necessarily, limited. Moreover, being in a journal where many subjects are treated, agriculture is apt to receive, at best, only a secondary consideration by the readers. Whereas in a journal wholly devoted to agricultural interests, this subject bulks larger, and the impression made corresponds.

And all may be had for a whole year for less than the price of a bushel of wheat or a bag of potatoes. A case this, truly, of much for little!

WHY SEND LABOR BACK TO EUROPE?

Continued from page 14

Every acre of land put to working here will cut our food bill and raise the taxable value of that land. Every factory built to manufacture machinery for those acres will give us that much more taxable wealth. Every workman's home built will raise the Government's income to some extent, or cut down the rate on the present workingmen's homes. Every child educated in the schools of Canada is a future asset of Canada. Every bushel of grain, every pound of meat or fish, every foot of lumber that we can produce and send to Europe, after supplying our own wants, will bring us taxable wealth, Government income to help defray the war bill.

Some may contend that we have plenty, and that a surplus of farm products would lower the market. Not while there is a shortage of milk for babies in the world, will I believe that. The dairy business is not more than half what it should be. There is more and easier money in raising grain for export, and labor is too scarce to make dairying attractive. A farmer can run a hundred acres of grain alone, but to run a hundred acre dairy farm requires the steady work of two steady men, and where is the farmer to get the other steady man? When I was a boy, milk, the best food for growing children, was also the cheapest. The poorest child could have a dish of bread and milk, but to-day it takes a plutocrat to look the milkman in the face. Two years ago I visited my old home in Illinois. The county which in 1910 produced the most milk per acre of any place in the United States, and claimed a world's record, is producing less than a third of what it did then. Creameries are closed, some turned into barns and some in ruins. The farmers are selling their Jerseys, Ayrshires and Holsteins, and selling their grain or feeding it to Shorthorns and Herefords. The same district that used to boast of a "milk train" and "refrigerator day" is now sending out grain trains. The farmers told me that help is too scarce and unreliable to allow of their trusting their fortunes to dairying. The only dairy farmers are those with families of well-grown boys, and when the boys leave the parental roof to start farming for themselves they will have to leave dairying alone until they have boys of their own. Then the chances are that their boys will go to town to work, where instead of being in business for themselves they will become "labor."

There are many men in Canada who would get to the land if they knew how. Very few foreigners know anything about the homestead laws, and very little encouragement is given the seeker after land. Some medium which would bring the man and the land together would help a great deal. Instead of sending foreigners back to Europe, why can they not be put to work developing some of the public resources? Belgian and French civilians were put to work digging trenches for the Huns. Why cannot the enemy aliens in Canada be put to work under military supervision on some of these development enterprises?

A Great Plowing Engine

This Case 10-20 Kerosene Tractor

THE country over, there is consistent and continuous applause rendered the Case 10-20 Kerosene Tractor.

In all the written and spoken recommendations, there always stands out prominently the comment that its performance and economy are unbeatable.

Men say that it is unusually powerful for its size. They give due credit to its four-cylinder Case motor, valve-in-head type cast en bloc and mounted cross-wise on the frame.

Under ordinary conditions this Case 10-20 pulls three plows. It develops 14.7 horsepower at the drawbar, which is 47 per cent in excess of its rating. This is the most liberal reserve power we know of in a tractor of this rating.

Such power means that there be no hesitancy at hard plowing. A great many owners have commended this Case 10-20 for breaking sod. For every hard job it is a record-maker.

Its fame for draw-bar work is matched by that of its belt work. It will drive a Case 20 x 36 Thresher, with feeder and windstacker, and other machines requiring similar power. The belt pulley is properly placed, avoiding the usual awkwardness.

If you are interested in a two or three-plow tractor for heavy duty work and one which is built to the highest standards, do not fail to write for a complete description of this Case 10-20.

We can offer you quick service in delivery, because of our immense manufacturing facilities. You will be proud to own one of these popular tractors.

CASE
KEROSENE TRACTORS

Write today for complete information or visit a Case dealer.

J. I. Case Threshing Machine Co., Inc.
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HERCULES
Leather-Chain Trace

A harness is as strong as the trace—no stronger. The trace takes the strain and the strongest trace is the best. The Hercules is a flat shaped trace, strong as steel, flexible as leather, tough and unbreakable, made of steel chain covered with heavy leather neatly finished in turned and rounded edges strongly stitched. Powerful heel chain and either clip or bolt piece at hame end; one and one-half inch solid leather billot. Does not chafe the horses and is tremendously satisfactory. If you don't have the Hercules Trace on your heavy harness, don't wait order a set NOW. If your dealer does not have it, order from us direct. We will ship same day, on receipt of price.

$14 PER SET

SAMUEL TREES & CO., Ltd.
ESTABLISHED 1866
46 WELLINGTON STREET EAST, TORONTO

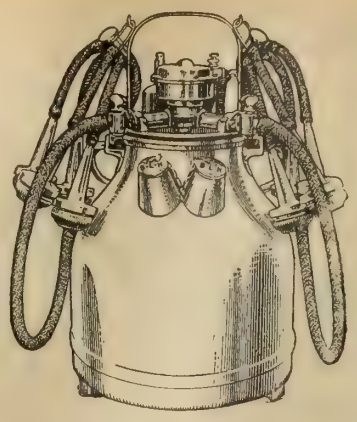
"Built to Wear"

A STRONG, well made raincoat especially designed for school and messenger boys. Made of heavy material, finished with corduroy collar, solid brass rust proof clasps and two strong outside pockets. In two colors—Black and Olive Khaki.

Ask your dealer.

Tower Canadian Limited
TORONTO
Halifax Vancouver
2 Coast to Coast Service.

Two cents per cow per day



"The annual cost of operation for a 25 to 35-cow outfit, including repairs, power, labor in caring for engine, and washing machines, interest on investment, and ten per cent. depreciation on machine, would amount to approximately $225.00.

The above is approximately one-third of what the farmer is now paying the hired man, where board is not taken into account.

Divided between 30 cows, this brings the **running expenses** down to **two cents per cow per day.**"

Special Circular
"THE MILKING MACHINE"
Dominion Experimental Farm

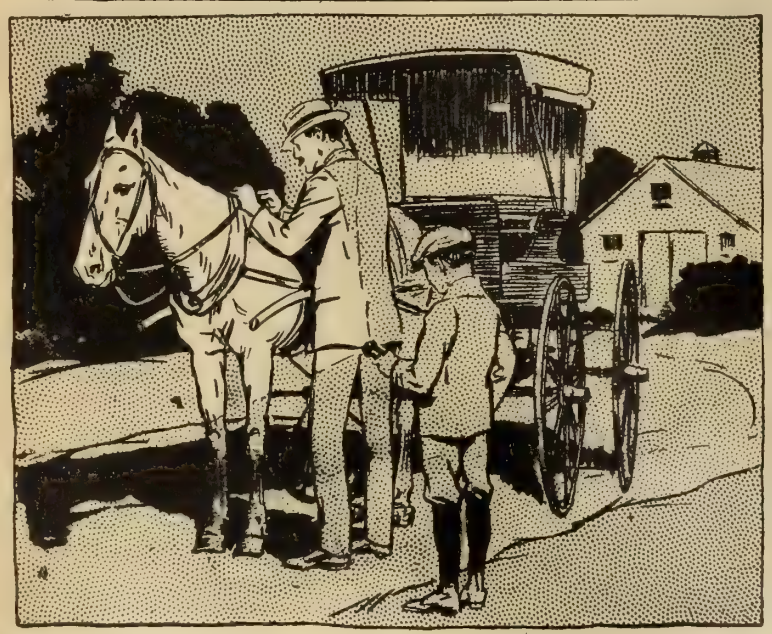
The average man will not milk more than seven cows per hour, which at 25c per hour costs 7.2 cents per cow per day for handmilking. One man with the Burrell (B. L. K.) Milker can milk 20 to 25 cows per hour, which brings the total cost of machine milking including daily running expenses to 4.5 cents per cow per day.

BURRELL
B-L-K
MILKER

The Burrell Milker also enables one man to milk many more cows than it is physically possible for him to milk by hand.

Write us for pamphlets which tell all about the Modern Burrell (B.L.K.) Milker.

D. Derbyshire Co., Limited, Brockville, Ontario



NUMBERLESS USES

Don't be handicapped after dark. Get a Reliable Tubular Flashlight or Searchlight and flash its brilliant beam anywhere. Can't blow out, explode, or set fires. When not in hand it's in pocket—out of the way. Good for long service.

Handsomely enamelled, metal cases in colors. Complete line of flashlights and searchlights.

Try Reliable Ignition Batteries for the car or truck, or any other use. They are full of snappy, long lasting energy. All Reliable Products are of real Canadian manufacture.

For sale by dealers everywhere.

DOMINION BATTERY COMPANY LIMITED
Toronto, Canada

What the Season Brings in Fashions

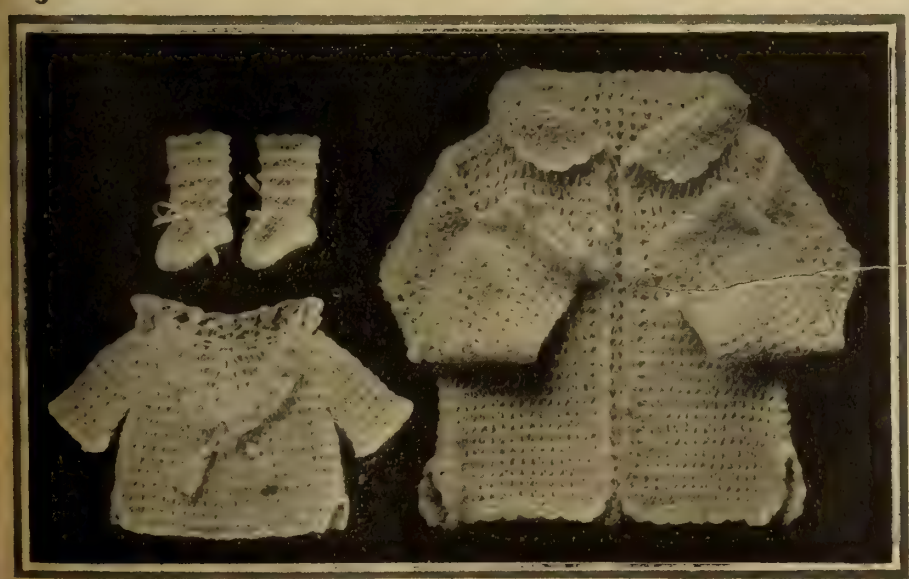
Smart, new models in suit and driving coat. The hat is of black straw with corded ribbon wings.

The figured silk foulard dress will be especially popular this year. It is a dress that gives excellent service for all occasions and wears splendidly

The gown shown at the right shows one of the new combinations of cloth with a vestee and collar of silk in a contrasting color. The pin tucks are one of this spring's pleasing trimmings.

Fashionable models for the large or small hat

Two popular models for spring and summer



Even the baby can have a slip-over sweater coat

There's a Bright Side To This Food Question

Some foods have doubled and trebled in cost. But Quaker Oats—the food of foods—still costs a little price.

You get little meat for a dime nowadays. But you can serve *20 dishes* of Quaker Oats for a dime.

The average cost of meat and fish foods is at least 50 cents per 1000 calories. That is ten times Quaker Oats' cost for the same energy value.

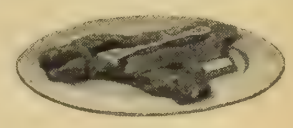
Yet Quaker Oats is vastly better food. It is almost a complete food. It is considered the ideal food, especially for young folks.

As a body-builder, as a vim-producer, oats have an age-old fame.

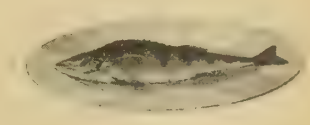
Compare your foods by calories, the energy units. Know what your money buys. At this writing this is what you pay for some necessary foods:

Cost Per 1000 Calories	
Quaker Oats - -	5½ cents
Round Steak - -	41 "
Veal Cutlets - -	57 "
Salt Codfish - -	78 "
Canned Peas - -	54 "
Hubbard Squash -	75 "

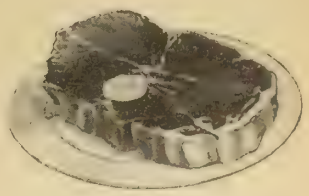
Ten Quaker Oats breakfasts can be served for the cost of one meat breakfast of same energy value. Yet think what delicious breakfasts Quaker Oats supply.



57 Cents
Per 1000 Calories



50 Cents
Per 1000 Calories



75 Cents
Per 1000 Calories

54 Cents
Per 1000 Calories

Quaker Oats

Extra-Flavory Flakes

This is oat food of a super-grade. It is flaked from queen grains only—just the big, plump, flavory oats. We get but ten pounds from a bushel.

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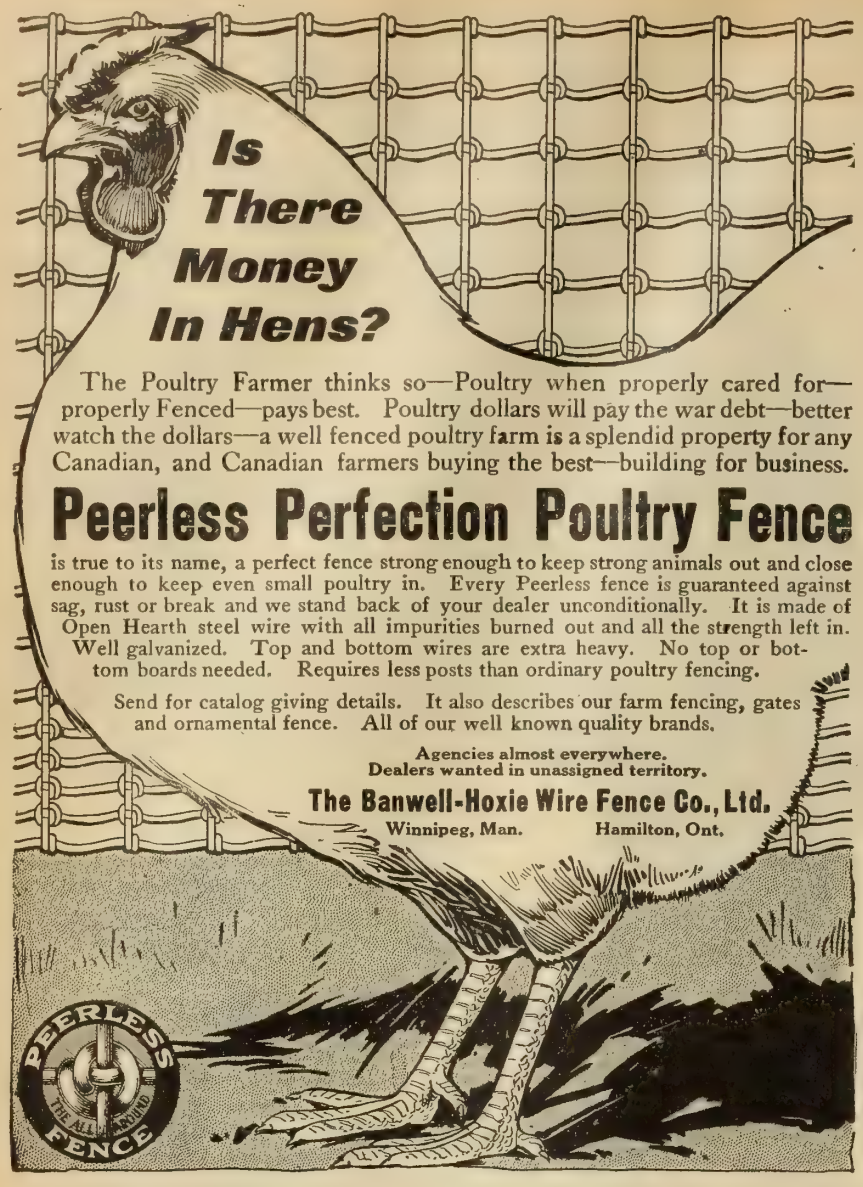

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"I have also commenced a small dairy, having five cows which are yielding at the rate of $90 per month.

"My land is in a district where alfalfa is an established crop, and two or three cuttings can be taken off in a season."

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A Primer of Mothercraft

The New Baby's Creed of Right Living

By SARAH COMSTOCK

ONE day I asked a famous pediatrician to formulate a very brief creed stating the fundamentals of a child's right living. Here are the articles of the creed:

Plenty of air, which includes sunshine, as sunshine always gets in with the air if it is anywhere around.

Plenty of rest.

Plenty of water. (This means both within and without).

Moderate and nourishing food.

Moderate clothing—ask yourself if the child is coolly enough dressed rather than warmly enough.

Plenty of play.

Plenty of common-sense.

Which last, being interpreted, means the wisdom and the initiative to adapt all laws to your individual conditions.

I believe I have a right to be happy—a good start at eight months

Let's look over the articles of the creed, one at a time. Plenty of air is the child's right from the day it arrives. Not only should the nursery air be kept clean by constant ventilation, at first by means of the window board if it be winter; but every little while the room should be flooded with outdoor air. Move the baby into another room while you open every window wide. Do this as soon as he is dressed in the morning, to start the day well; just before you put him to bed, to start the night well; and in between for good measure.

He must have fresh-air baths indoors by way of introduction to the open. Before he is a month old—we are talking about the winter baby now—he is to be dressed in cap and cloak, placed in the carriage; in short, given to understand that he is to make his first outing—and then entertained with the closest imitation of that outing consistent with the weather. Roll the carriage to a position near the windows, fling every one of them open wide, both top and bottom, close the doors, and give him a good quarter-hour outing indoors, increasing its length daily. When six weeks old he can go out—say for a half-hour at first, longer each succeeding day. Suppose he is a summer baby; take him out at even a week, say the modern-among-moderns, in the very best weather; at any rate, before the first month has elapsed.

In all this common-sense must judge for itself. It recognizes the fact that a strong wind is irritating to the respiratory organs of a baby; that a thermometer below freezing is a warning to the very young baby; that the latter part of the forenoon, say about eleven o'clock, and the middle of the afternoon are his best times for a ride in cold weather, although all the long summer day, if fair, is his to revel in. He should fare forth in his carriage from the beginning, never in arms. He needs the carriage hood to shield his supersensitive eyes, and his position on the cushion is better than when carried.

Up-to-date physicians approve of outdoor sleeping, although the safe-and-sane type are uttering a warning against over-zeal in this matter. The temperature, as well as the robustness of the child, must guide you. A bitter little tragedy of last winter proved that the baby heart is not stout enough to pump in defiance of any temperature.

But it's a safe rule for the growing child that, other things being equal, the more hours of the twenty-four he spends in the open, the better. Eating, sleeping, working, playing, loafing—he can do every one of these, at least a part of the year, outdoors. Two of the greatest ills that flesh is heir to—tuberculosis and nervous disorder—are treated nowadays with fresh air. Forestall the physician.

Now for rest. Your new baby sleeps nine-tenths of the time. It ought to. Occasionally it takes a brief vacation from sleeping in order to cry. This, too, is as it should be. At least a half-hour a day ought to be spent in what appears to be lamenting its fate, but is, in reality, mere lung-exercise and a sort of self-assertion; a way of stating, "I'm alive, and I wish it thoroughly understood." But for all its assertions it is too helpless to turn itself in bed, and it must be turned, for its present comfort and for the sake of symmetrical development. Except for this, the more it is left alone the better; after one month, it need be fed but once during the night.

The young baby is extremely excitable, and too much stress cannot be laid on the quiet which is its right. One of the commonest of baby-abuses is putting it to bed in a stimulated condition—playing with it, romping and laughing, at bedtime. Instead of this, it ought, for at least a half-hour, to be gently drawn into a state of relaxation. It can be undressed slowly, soothed by quiet talking and peaceful lullabies, led toward the total loosening of nervous tension which the night should bring. Care must be taken, however, that it does not grow dependent upon singing, rocking, or any other form of soothing.

The child needs sleep, much sleep, moreover, restful sleep. All sleep is not restful. If the healthy child does not sleep well, find out the reason. Cold feet should be rubbed. The bedclothing may be too heavy, or too tightly tucked in. The room may be stale of air. With a baby, there may have been carelessness in dressing, or too rapid feeding which has caused slight colic. Its last meal may have been insufficient. An empty stomach may disturb the sleep of the older child, too; some light food, such as crackers and milk, may be needed at bedtime to draw the blood away from the head. Adenoids or enlarged tonsils may be interfering with the breathing, making the child restless. There is a reason, at any rate, and it is your business to keep on hunting until you find it out. Every child at every age, should have long, sweet hours of undisturbed sleep at night, and a nap every day for the first half-dozen years of its life, if not longer, making a total of ten or twelve hours if posible.

Plenty of water—here is where the splashing begins. The normal baby ought to take to water like a duck. And it will, if the bath is properly given. It is about ten days old when the first tubbing takes place. The room is warm, and the temperature of the water is 100 Fahrenheit. Later, you will have a chance to don your own bath-apron; just now, the best you can do is to observe, while the nurse holds your offspring, bathing its head and face and drying them first; then gently soaping over the little body and immersing it quickly. And you make a note of the fact that babies are patted dry, not tubbed.

The temperature of the water does

not go below 95 degrees for the young baby. Decrease gradually, until you bring it to 85 degrees by the end of the first year. These temperatures are for the first bath; the second is the cool rinsing which follows, to close the pores against cold, and to stimulate. The second should never be cold for a baby, merely refreshingly cool.

In all the hygiene of bathing it is well to remember the meaning of the two baths. The warm is for cleansing and relaxing, the cool for stimulating. A restless child may be cured of bad sleeping by a warm bath at bedtime. Make the water tepid, sponge the baby off, using only a little soap, dry the body softly, then rub the limbs and back with a soothing movement. The cool bath is for the morning, and is given without soap, and sometimes with a little alcohol added, for a tonic.

The finishing touches of the bath are the powder, either rice or perfumed talcum, well-dusted into all the fat creases, but not lavished all over the body, lest the pores be clogged; and a cleansing of the eyes with a solution of boracic acid—one teaspoonful to a pint of water, used tepid. You remember that is to be squeezed into each eye from a bit of absorbent cotton, the baby held so that the water will run to the outer corner of the eye.

Plenty of water within, is a subject included with diet, and diet is so vast a subject that it is to be omitted here. Next in the creed comes clothing.

The first thing to remember is, that it should nearly always be lighter than it is; the second, that it should be properly distributed. Heavy underwear and bare legs in cold weather mean a very poor distribution of clothing over the little body of the child who is old enough to run about. Dress the child in underwear at least one grade lighter than the heavier, even in mid-winter, but cover that child all over its body when it is outdoors. Our modern houses are warm, and the child's circulation is brisk, and should not be bundled indoors; the change can more easily be made by means of the outer garments, putting on a warm coat and leggins. Always remember that knitted garments and loose-woven garments are both warmer and lighter than close-woven, thick ones.

Plenty of play, says the creed. It is rather a pathetic thought that this generation has to make a science of play for its grown-ups. Thank fortune, the normal child still knows how to play if it is given the chance. See that it has this from the beginning, and the physical exercise of the growing child will pretty well take care of itself.

The new baby cries—Yes, fond and apologetic mother, it screams—but that's part of its gymnastics. The lungs are expanding. It wiggles and kicks and flaps its arms as if about to crow, and investigates, with contortions, its fingers and toes. Let it. That's all it needs—loose clothing and covers, bare feet, opportunity. Spread a quilt on the nursery floor, strip the baby down to its diaper, and let it entertain itself like a circus acrobat—this by the time it is a few months old. Before that, your own wide bed may be used instead of the floor. Take it out of its carriage when it is outdoors, and let it kick with enthusiasm over the delightful outer world it is getting acquainted with. A pen, or inclosed playroom, is excellent; a two-foot wall incloses a mattress, and the baby can entertain itself therein. Such a pen may be purchased on wheels.

Play, exercise, should be as spontaneous as possible. Don't make a slave of yourself to amuse the baby. It is better off without you. It is better off without your urging when it starts to walk. This, as well as the play, should be spontaneous. The baby knows pretty well when it is ready to undertake the great change from elemental four-footedness to the uprightness of civilization. Never offer it a mechanical aid. The common "walker" is pernicious; don't use it. If the baby really shows a desire to walk, but is timid, hold your hand a foot from it and encourage it to walk to you. Always bear in mind the fact that the young bones are soft, in the formative process and misshapen legs may result from too early walking and standing.

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Candy has established itself as a wonderful food product. It is no longer considered a luxury. Men and women everywhere have found it to be an excellent food.

Because of its food value, candy was classified as a necessity for both soldiers and sailors.

While at the Front, General Pershing cabled: "Send candy if you have to omit oatmeal."

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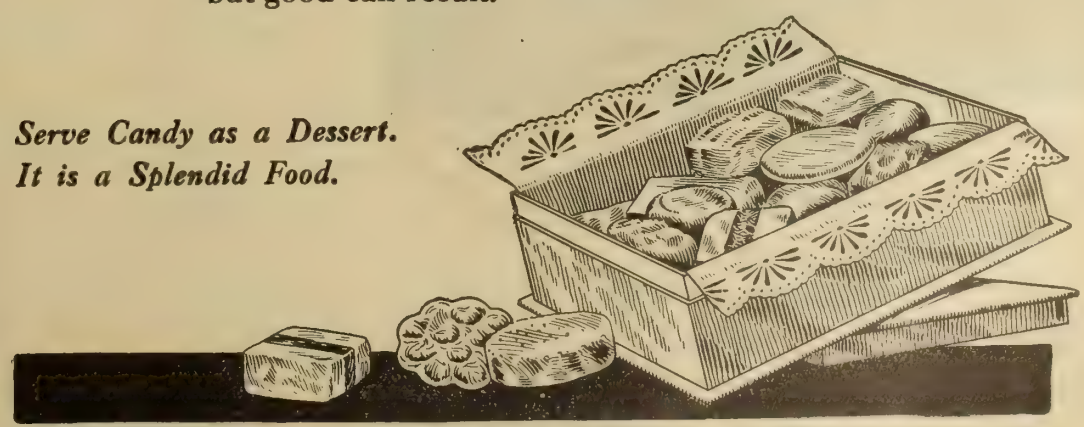

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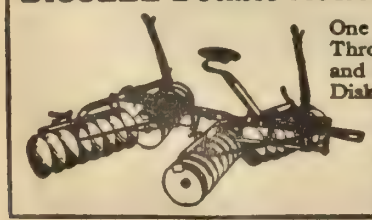

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We have doubled our factory capacity and are determined to supply our customers far and near. See advertisement also on page 54.

Seasonable Egg Cookery

EASTER brings the season for the generous use of eggs, a fortunate thing for the spring diet since eggs are one of the most complete and nutritious and easily digested of our protein or building foods. It must be borne in mind, however, that all these qualities can be lost or destroyed by wrong cooking. An egg is most easily digested if taken raw, slightly beaten so that the digestive juices can reach it more readily. The disadvantage of raw eggs, however, is that they do not appeal to the appetite of many people; most eggs must go through the cooking process in some form or other before they are eaten, and it is in this process that many eggs are spoiled. An egg cooked until it is hard, tough and horny would in most cases be better not eaten at all. The toughness comes from long, hard cooking. Where an egg must be "cooked hard" it should be cooked slowly at simmering temperature for half an hour. A "soft boiled" egg is best either put in cold water and removed as soon as the water reaches boiling point, or the eggs may be put in sauce pan with a good quantity of boiling water, a cupful to each egg, covered closely and set on the back of the range, where the water cannot boil, for six or eight minutes. Eggs cooked in this way are almost as easily digested as raw eggs. While eggs are one of our highly nutritious foods, there are some erroneous ideas prevalent regarding their high food value, such as the saying that one egg is equal to a pound of meat. The truth is that a pound of eggs (from seven to nine eggs) is equal in food value to a pound of beef. The following recipes may be helpful in suggesting a variety of dishes which will keep eggs popular throughout the season:

Eggs Poached in Milk

Have ready a saucepan with milk at scalding temperature. Carefully drop in the eggs and cook slowly, without letting the milk boil. Remove the eggs to a hot platter or individual serving dishes. Thicken the milk with finely rolled cracker crumbs; season with salt, pepper and butter; pour around the eggs. Sprinkle the eggs with salt, pepper and chopped parsley, if desired, and serve hot.

Scrambled Eggs

5 eggs
½ cup milk
½ teaspoon salt
⅛ teaspoon pepper
2 tablespoons butter

Beat the eggs slightly, add salt, pepper and milk. Heat frying pan; put in butter, and when melted turn in the mixture. Cook until of a creamy consistency, stirring and scraping from the bottom of the pan.

Delicate Scrambled Eggs

4 tablespoons butter
4 tablespoons flour
2 cups milk
1 teaspoon salt
Pepper
4 eggs

Make a white sauce as follows: Put the butter in the double boiler over the fire. When it melts stir in the flour and gradually add the milk, stirring until well thickened. Break the eggs in a bowl and beat slightly, then turn into the white sauce, stirring and lifting with a fork. Set over water to finish cooking. Stir, lifting the mixture from the bottom as it thickens until it is of a light creamy consistency.

Scrambled Eggs With Tomato

1 cup condensed tomato soup
or boiled down stewed tomato pulp
⅛ teaspoon soda
4 eggs slightly beaten
6 slices buttered toast

Heat soup in an omelet pan; add soda and stir while foaming. Add eggs, scrambled slowly with a fork until firm and serve on toast.

Foamy Omelet

1 tablespoon bacon fat
4 eggs
½ teaspoon salt
⅛ teaspoon pepper
1-3 cup hot water or milk

Put fat in frying pan. Separate yolks of eggs from the whites; beat yolks until light and thick, whites until stiff. Add seasonings and hot water or milk to yolks, fold in the stiffly beaten whites and pour into the hot omelet pan. Cook slowly until well risen and firm, about ten minutes. Set the pan on the upper grate of the oven for two minutes to cook the top. When firm, that is, when the white will not stick when touched, fold the omelet, turn on a hot platter and serve plain or with tomato sauce.

The recipe for tomato sauce has been given in a previous issue of "Farmers' Magazine."

Bread Omelet

2 tablespoons bacon fat
¾ cup soft, stale bread crumbs
¾ cup hot milk
½ teaspoon salt
Pepper
3 eggs

Melt fat in frying pan. Let crumbs soak in hot milk for five minutes. Beat yolks until light and thick, whites until stiff. Add milk, crumbs and seasonings to the yolks. Fold in the stiffly beaten whites and cook the same as foamy omelet.

French Toast

2 eggs
1½ cups milk
6 slices stale bread
2 tablespoons butter or bacon fat
Salt and pepper

Beat the eggs slightly, add to the milk. Melt the butter or bacon fat as required in a hot frying pan. Dip the bread into the egg and milk mixture, letting it soak slightly, and fry in the greased pan until well-browned on both sides. Sprinkle sparingly with salt and pepper if desired.

Eggs and Cheese With Toast

Make milk toast as follows: Make a thin white sauce following recipe for white sauce given in the recipe for delicate scrambled eggs above, only use one and one-half cups milk to two tablespoons flour. Dip slices of toast in the sauce and remove to a hot platter. Use recipe for scrambled eggs, having the eggs slightly underdone. Pour eggs over toast, sprinkle with grated cheese and set in the oven to melt cheese and finish cooking the eggs.

Devilled Eggs I.

Cut four hard cooked eggs in halves, lengthwise. The eggs must be cooked till the yolks are mealy. Remove yolks, mash and add two tablespoons grated cheese, one teaspoon vinegar, one-fourth teaspoon mustard and salt and cayenne to taste. Add enough melted butter to make a mixture of a consistency to pile back in the whites. Where the eggs are being prepared to carry as for a picnic lunch, cut crosswise fill with the yolk mixture, fasten together with a toothpick and wrap in waxed paper or butter paper.

Devilled Eggs II.

Cut hard cooked eggs in halves, as above. Remove the yolks, mix with salad dressing and pile back in the white cases.

Cheese Fondue

1 cup scalded milk
1 cup soft, stale bread crumbs
1 cup grated cheese
1 tablespoon butter
½ teaspoon salt
3 eggs

Mix the first five ingredients, add the yolks of the eggs beaten until lemon colored. Cut and fold in the

whites of the eggs beaten stiff. Pour in a buttered baking dish and bake twenty minutes in a moderate oven.

Baked Custard

4 cups scalded milk
4 eggs
½ cup sugar
¼ teaspoon salt
Few gratings nutmeg

Beat eggs slightly, add sugar, salt; pour on slowly the scalded milk and pour into a buttered baking dish. Set in a pan of hot water (this prevents the custard becoming curdled and tough from too high temperature. Try to keep the water just below boiling). Sprinkle with nutmeg, and bake in a slow oven until done. Test by running a silver knife through the centre. When the custard is done the knife will come out without any trace of milk. (Beat eggs only slightly for all custard mixtures. Much beating destroys the thickening properties).

Floating Island

2 cups scalded milk
3 eggs
¼ cup sugar
⅛ teaspoon salt
½ teaspoon vanilla

Separate the egg whites from the yolks. Beat yolks slightly; add sugar and salt; stir constantly while adding hot milk. Cook in a double boiler; continue stirring until mixture thickens and forms a coating on the spoon. (If cooked too long custard will curdle, but may be restored to smoothness by beating vigorously with a Dover egg beater). Add flavoring and pour into a serving dish. Beat egg whites stiff, adding sugar. Pile lightly over the top; brown slightly in the oven. Dot over with spoonfuls of jelly. Chill and serve.

Orange Pudding

Make a boiled custard the same as for floating island. Arrange slices of sweet oranges in a serving dish, cover with a meringue made of the egg whites. Brown slightly in the oven and chill for serving.

SAFEGUARDING HEALTH OF CHILD IN SCHOOL

Continued from page 8

growth had been removed when the deaf person was from four to eight years old, at any rate before twelve, he might be enjoying lectures, concerts, sermons, and music to-day.

If the child breathes persistently through his mouth, if he has repeated earaches or abscesses in the throat, heed the warnings. Adenoids are probably present and should be removed. Deafness is a probable result, and a general devitalizing, due to clogging and poisoning of the system. You wouldn't keep your child shut in a closet all the time; you would say the air was bad for him. He is in much the same situation with his breathing passages partially stopped.

The tonsils are the primary source of infection. If there is a constant tendency to tonsilitis, a physician should make an examination. Children should be taught to gargle when very young, and a daily gargle of a listerine solution, one part to five of water, may correct a tendency to "scratchy" throat. A persistent running of the nose may be merely the result of over or underdressing, causing a slight chronic cold; it may even result from a nutritional disorder. Mouth breathing may possibly be merely a habit, easily corrected. But for the most part of it is well to see a specialist if there are symptoms of ear, nose, or throat trouble, for they should be nipped in the bud.

THE care of the child's eyes should begin early. Don't be afraid of the oculist. Thirty-five per cent of ingrowing eyes in infancy can be corrected by the early use of glasses; this is better than being cross-eyed, isn't it? Any deviation from the normal should be looked after, and promptly. About fourteen inches from the eyes is the normal distance for holding a book or any close work; if the child holds it much nearer or farther, have his eyes

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examined. But a vast proportion of eye trouble is due to strain which might have been avoided by a watchful mother. Try preventive measures, and you may be able to defer the use of glasses until age calls for them.

Train your boy and girl in habits of care for this precious gift of sight. Teach them the simple code of honor toward the eyes. They should not read by fading light, while lying down, or with the light shining directly into the eyes. They should sit near a window or lamp, with the light falling over the shoulder. The same rules hold, of course, in writing, sewing on any close work. If the right hand is being used, be sure that the light falls over the left shoulder, lest a shadow fall on the work.

Aid and abet the child's own care of his eyes by furnishing him with a proper light for his studying. It should be steady, and so placed as to fall on the book. Teach him to close his eyes, or to look about the room for a few seconds as often as every quarter-hour. His outdoor play life will be a great help to his eyes, for it changes his focus from near to far.

Above all, never let your child use his eyes when he is weakened by illness. The results may be serious enough in any case, with the general strength lowered; but after the sicknesses that especially affect the eyes—for instance, measles—such carelessness is criminal.

HELP your child to possess sound, regular teeth. Not only will they be an ornament but they will protect him, in many cases, against digestive ailments. Don't make a bogey of his first teething process; it is far less serious than superstition claims. The child's nervousness at that time may be greatly lessened by an abundance of fresh air and particular attention to general quiet. Help along the new tooth by a gentle rubbing of your finger upon the gum; give him a ring of hard rubber or ivory, or the hard cracker ring; his troubles are well on the way to being over.

But while the first teething process is often taken too seriously, the later care of the teeth is seldom taken seriously enough. Dr. Walter Clayton, who has examined and treated the teeth of many school children, believes that the fundamental failure made in caring for the teeth is neglect of the primary ones. He considers it important that a child be taken to a dentist by the time it is three years old, even six months sooner, whether or not you know of any trouble. The dentist may detect something that you missed.

It's a common thing for mothers to say, "Oh, those baby teeth will fall out soon anyway—what's the use?"

Here are three answers to that:

The primary teeth, if decaying, may infect the second, or permanent teeth, ruining them for life.

They may, by falling out before their time, deform the soft, easily molded jaw.

They may, by being broken and decayed, cause imperfect mastication, with serious stomach trouble resulting. From the first, the teeth should be kept scrupulously clean. Wash gently around the first one; brush them later, with a tiny toothbrush, and before your offspring is old enough for the kindergarten he should learn to handle his own moderately stiff brush, working up and down as well as across. Tooth powder should be used in the morning, and plain water, or a few drops of tooth wash in water, at night. Let your dentist tell you what kinds to buy. Absolute purity is essential.

While the child is still young enough to drink a great deal of milk, there is a tendency to what is known as "green tartar." This is a lactic acid formation, and will increase at a rapid rate without proper cleansing. Every six months a dentist should look over the teeth. Protruding or crooked teeth can be fairly easily straightened in the beginning, but after the soft jaw hardens, efforts are long and painful,

often they fail altogether. Above all, guard the six-year molars. They are the most valuable asset in the way of teeth that humanity has, being the four real workers of the entire corps. They are willing to do the most of the grinding through life if they are cared for.

Even a toothbrush is not too small and too humble a thing to play its modest part in building the future of the human race, you see.

INSURANCE COMPANIES LOAN TO FARMERS

Continued from page 4

farmers of the country in the expansion and improvement of their operations.

The foregoing is an angle of the insurance problem which should not be overlooked. Resolved into a few words it means that when a man takes out an insurance policy he is *not only safeguarding the interests of his dependents but he is actually helping some other man to carry on and is thereby promoting the general welfare of the country.*

We are surely all interested in the prosperity of Canada, for the prosperity of the nation reacts beneficially on the individual. If, by buying life insurance, a man reduces the number of prospective paupers and contributes towards keeping business humming, it is surely a wise and patriotic thing for him to do. It creates a cycle of cause and effect which works out to the benefit of all concerned.

PROFITABLE POULTRY RAISING

By G. L. Parrott

There are several things to be considered in the housing of poultry. A house that will give the best results must be dry, well ventilated and yet free from drafts. The last few years have seen the introduction of the cotton front, open front style of poultry house. This style not only fulfils the above conditions but has the added advantage of being the cheapest form of poultry house to build. It has been thoroughly tried out in this province as in the others and has given good satisfaction under the most rigorous conditions. It is built on the fresh air idea without being too cold. The straw loft absorbs the moisture and the cotton front admits plenty of fresh air, which condition is not found in most styles of houses. The glass, cotton, and wood on the front of the house should be in the proportions of one-third glass, one-third cotton, and one-third wood.

After careful and thorough experimenting it has been found that a feed of mixed grain—fed in a deep litter in the morning a mash at noon composed of roots, bran, etc., and a feed of mixed grain at night will give the best results. It is a good thing to put some poultry powder in the feed at noon. It helps keep the hens in good condition and increases the egg yield. Hens should have access to clean water, grit, and green feed at all times.

ONTARIO SHEEP BREEDERS' WOOL SALES

THE success of co-operative marketing of wool has been proven beyond all doubt. In order to handle the increasing amount of wool arrangements have been made with the various District Representatives of the Department of Agriculture throughout the province to handle application forms and supplies. Since the grading of wool commences on May 1st, all farmers who intended shipping their wool to Guelph should make application to the District Representative in their county and supplies will be forwarded at once. Application should be made early so that all supplies may be distributed before May 1st, when wool grading begins.

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For Bugs and Diseases

DON'T be satisfied to take as *your* share of the crops only just what luck has saved for you after the bugs and diseases have had all they want!

Don't let bugs and diseases get away with your profits because you do not spray, or because the sprayer you use fails to do a *real* job.

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Iron Age Sprayers, with their high pressure, reduce wastage of spraying solution and make spraying costs insignificant compared with the increase in quality and quantity of crops.

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Nitrate of Soda

The Best of Fertilizers, Now Available

THIS valuable fertilizer, which was used in the manufacture of Explosives, was either unavailable during the War or commanded such a high price that its use was out of the question for the average farmer.

The Imperial Munitions Board are now in a position to offer a quantity of this fertilizer at greatly reduced prices and farmers should take advantage of this great opportunity and send in their orders early.

Plants must get food to make their growth just as animals require food. If the food is abundant, the growth will be vigorous, other conditions being favorable. If the food is scarce, the growth will be stunted. If the soil does not naturally furnish the necessary plant food then the food must be specially supplied. Many soils are deficient in Nitrogen, and this element should be supplied by the use of Nitrate of Soda.

It is this element that gives growth and luxuriance and the deep green color to foliage. It is essential to the well-being of the life-holding substance of the plant. Pale, sickly, slow growing plants probably lack Nitrogen. Nitrogen gives young plants the quick, vigorous start so necessary for the best crop production. Plants, like animals, if stunted in youth, cannot attain their best in maturity.

Of all substances used as plant foods and containing Nitrogen, the Nitrate of Soda stands supreme for its quick action. It is quite soluble in water and so can pass directly into the plant just as quickly as the root hairs can absorb it in the soil moisture. The dews are sufficient to bring it to the roots. Moreover, it needs no making-over. It is ready-made food suitable for the plant's digestion.

Nitrate of Soda the Basic Fertilizer

The average yield of wheat in Europe was 33 bushels to the acre while that in America has been only 14 bushels. The use of fertilizers explains the difference.

And Nitrate of Soda is the basis of practically all Fertilizer mixtures.

It will be used more and more as the years develop and as Agriculture advances.

A comprehensive report on "Nitrate of Soda, its nature and use in agriculture" has been prepared by the Dominion Department and is printed on another page of this paper. It has been prepared by Frank T. Shutt, M.A.D.Sc., Dominion Chemist, and B. Leslie Emslie, F.C.S., Supervisor of Investigational Work with Fertilizers.

Advantages of Nitrate of Soda

Remember that in buying 100 lbs. of Nitrate of Soda you are getting 15.7 lbs. of Nitrogen, the most necessary of plant foods, and in unadulterated form. One knows what he is buying just as he does when he buys 100 lbs. of flour or sugar.

The Nitrogen contained in the Nitrate of Soda is immediately available for the plant's use.

It leaves the soil sweet. Many fertilizers have a tendency to make the soil sour. Plants cannot thrive in sour soils.

It has an especially high value for crops such as peas, corn, clover, alfalfa, etc.

It produces a vigorous growth in the young plants which gives them the necessary vitality to resist disease, attacks of parasites, drought or sudden changes in temperature. Weak plants succumb. Young plants are weak because of an insufficient supply of Nitrogen, which Nitrate of Soda will supply.

It is the most economical source of Nitrogen. Much of the Nitrogen in other forms of fertilizers, as tankage, cotton seed meal, dried blood, etc., is frequently lost while being transformed for use by the plant. In the Nitrate it is immediately used.

Because Nitrate of Soda is readily soluble in water it is most economically employed as a top dressing to the growing crop. Some may be used at the time of seeding and the remainder in a few weeks after the young plants are a few inches high. For garden crops, smaller and repeated application are recommended. Applications should be made on a dry day. In the garden it may be sprinkled between the rows. For the lawn it may be dissolved in a barrel of water and sprinkled on with a watering can.

Nitrate of Soda Greatly Increases Yields

The Ontario Experimental Union reports an increase of about 6 tons of mangels an acre from the use of 160 lbs. of Nitrate alone, this based on experiments in different parts covering several years. With the use of 80 lbs. of Nitrate to the acre, the yield of rape was increased over 2 tons. Such increases are profitable to all farmers.

Price and Instructions for Ordering.

The Nitrate of Soda is stored in Ontario at Brighton, Cobourg, Trenton, Nobel and Sulphide. The Price is $82.00 per net ton in carload lots, f.o.b. cars at shipping point. The Board reserves the option of selecting the shipping point.

In less than car lots the price will be $9.00 per bag weighing approximately 200 lbs. each, f.o.b. shipping point. Minimum shipment five bags.

All orders must be sent to Imperial Munitions Board, 56 Church St., Toronto, and each order must be accompanied by a marked cheque or money order for full amount of the purchase. Cheques and money orders should be made out in favor of Imperial Munitions Board, and must be payable at par in Toronto. In ordering please give full shipping directions including your Post Office address, name of railway and of your nearest railway station. All shipments will be made promptly. Freight charges will be collected on delivery.

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Its value is incalculable.

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Caution to Ford Owners

Never allow "spurious" or imitation parts to be used in repairing your Ford. Your repair man if he is earnest in his desire to serve you well—can get genuine Ford parts and sell them to you at a reasonable profit.

You need never accept "spurious" repair parts. In any locality, in any emergency, there is sure to be close at hand, a Ford Service Station.

Demand genuine Ford parts. Be firm.

Keep your Ford running at full Ford efficiency.

FORD MOTOR COMPANY OF CANADA, LIMITED, FORD, ONT.

DEMAND Genuine Ford Parts

91

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---one that is big enough for the job!

The Phelps Light and Power Plant is being welcomed by farmers all over Canada because it is the best buy on the market. Why?

It is the only electric light and power plant big enough to deliver all the light and power you need. It will last longer than any other plant built. It costs less to run than any other plant; needs less attention; does more work.

It's another case of the old story—the **best is always the cheapest.** Why should you write your check till you have satisfied yourself? Look at the facts. We selected the Phelps on the recommendation of our consulting engineer—one of the best engineers on the continent. He tested all the electric plants being made to-day. He selected the Phelps because it was designed **right**—built right—and meets every test for dependability.

R. W. Phelps designed this plant—a man who has spent years in designing gas engines and electric generators. It came out on top of the severe tests made by the U.S. Government experts. Thousands of practical farmers are using it to-day.

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It is a powerful, dependable engine, 3½ horse-power—note that—directly connected to a 1500-watt generator.

More Power And Cheaper Power Saves Time and Labor

DIRECT Power from Engine!

Power is the great thing on the farm. Phelps has power—enough power to run churns, separators, washing machines, etc., by belt power from a "Power-Pulley."

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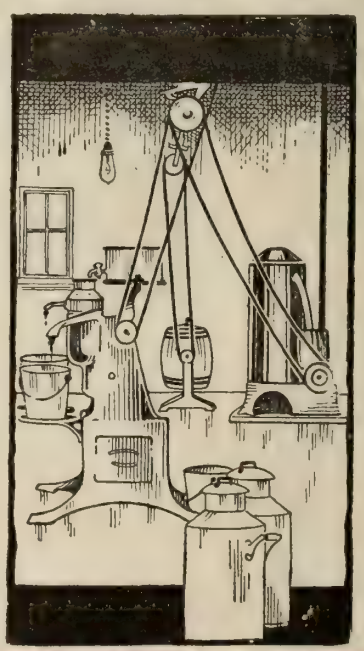
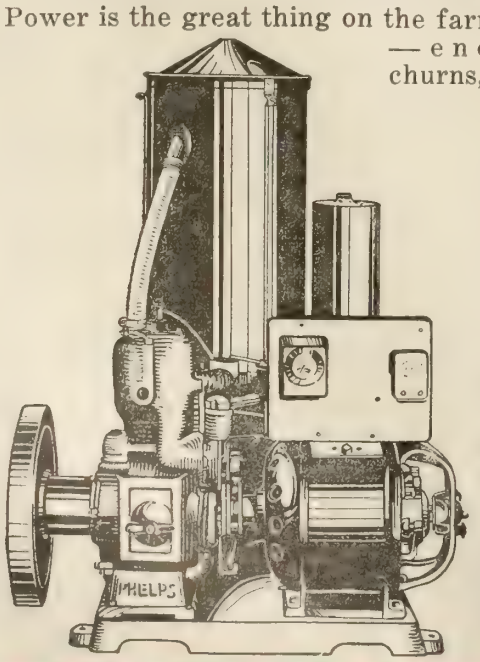
A child can run the Phelps plant—push a button and it starts; stops when the battery is charged; open a switch and it goes on running as a power plant, leaving the battery ready for lighting.





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VOL. XII, No. 9 MAY 1, 1919 $1.50 Per Year 10 Cents Per Copy

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In the straight wing bowl of an ordinary separator the delicate globules of butter-fat are dashed against the inside edges of the discs and are smashed. This means inferior butter. In the Renfrew these frail globules are conveyed in the milk along curved wings without whipping. The result is you get firm butter that commands higher prices.

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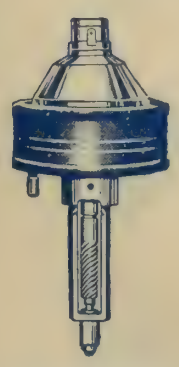

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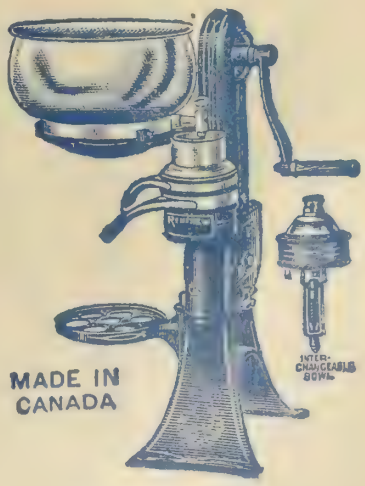

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Wilson Feared the British

THE American President crossed the Atlantic in the first place with the idea in his mind that his ideals would be thoroughly in accord with those of the French statesmen; but he was rather afraid of a conflict with the British delegates. He found in reality that his plan for peace terms was as far removed from the French plan as the two poles. Then he crossed to London and was surprised to find that the ideas of the two Anglo-Saxon powers were identical.

This situation, according to J. W. Dafoe in the May issue of MACLEAN'S MAGAZINE, explains much that has developed at Versailles. Further, it contains the promise of a close rapprochement between the two great English-speaking democracies for all time to come.

Mr. Dafoe has contributed a remarkably interesting article to this number of MACLEAN'S, lifting the curtain on many of the puzzling situations that have arisen overseas. As the editor of the Manitoba "Free Press," he is the dean of Canadian newspapermen; as the representative of the department of Public Information on the Canadian Mission to the Peace Conference, he was in a special position to learn what was transpiring. He tells of the really big part that Canada has played in the Proceedings and points out that Canada's status as a nation was firmly established in the eyes of the world when she was allowed separate representation.

A Dozen Other Features---Nationally Important

This May issue is full of articles of unusual significance for Canadian readers.

"Solving the Problem of the Arctic"

—By Vilhjalmur Stefansson

The second instalment of his remarkable story of the four years of exploration that he undertook for the Canadian Government in the region of the "Pole of Inaccessibility"—a harder place to reach than the North Pole.

"Organizing for Peace"

—By George Pearson

An article on the Great War Veterans' Association by a well-known author-soldier.

"The Canadians in Siberia"

—By Capt. W. E. Dunham

A graphic story of what our forces did in combatting the Bolsheviki, by an officer who has just returned.

"Safe in the Saddle"

—By J. K. Munro

A review of affairs at Ottawa in which the opinion is expressed that Union Government for the time being is safely entrenched.

Four capital stories by famous authors—W. A. Fraser, Lloyd Osborne, Frederic S. Isham and C. W. Stephens.

The National Idea

The articles in this issue of MACLEAN'S reflect the national idea—Canada's part in the Peace Conference, the political situation at Ottawa, the exclusive report of Stefansson's national explorations, the national organization of our returned men, the work of our forces in Siberia. The reader of MACLEAN'S gets a broad idea of what Canada as a whole is doing. The value of this issue—and of all issues—is very great, therefore, from an educational standpoint.

MACLEAN'S is the one magazine that should be selected for young Canadians to read.

The Review of Reviews

An unusually fine array of articles is given in this department, selected from the best in magazines and periodicals the world over. Some of the titles are:

Planned to Destroy British Fleet
How Mackensen Was Caught
Events of War Foretold by Stars
What is Life Beyond the Grave?
A High-born Bolshevik
The New Life in Dry America
Germans Were Ready to Capitulate
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So handy and convenient—a household necessity!

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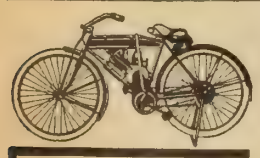

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Canada's National Farm Magazine

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An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.—Lloyd George.

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THE FARMER'S EXCHANGE
SEMI-MONTHLY

Five Cents a Word—Per Insertion

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SPRAYERS

AGENTS—MASON SOLD 18 SPRAYERS and Autowashers one Saturday; profits $2.50 each; square deal; particulars free. Rusler Company, Johnstown, Ohio. (May 15, 19)

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MAPLE SYRUP

WANTED — PURE NO. 1 MAPLE syrup. Write stating the price. Box 20, Farmers' Magazine, 143 University Ave., Toronto.

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SAVE BIG MONEY ON LUMBER — Write to-day for our "Mill-direct-to-User" prices before ordering elsewhere. Satisfaction guaranteed or money back. Shipped anywhere. Davies Construction Company, Vancouver, B.C. (Nov. 15, 19)

FARMS FOR SALE

131 ACRES, $3,800, WITH PAIR horses, 10 cows and all farming implements, wagons, carriages, hay, fodder, near RR town, easy drive city 100,000; 75 acres heavy cropping tillage; 28-cow pasture; mile creamery; wood, timber, fruit, berries. Good 12-room house, large barns, silo, granary, corn houses. To settle, quick buyer gets money-making farm, $3,800, easy terms. Details page 42 Spring Catalog Bargains, 19 States, copy free. Strout Farm Agency, 752H Ellicott Square Bldg., Buffalo.

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IDEAS ABOUT HOW NEW MONEY can be made on the farm will always attract the wide-awake farmer. If you want a book that is full to the brim of hints and ideas about farming in every department, send for **Making the Farm Pay**, by G. C. Bowsfield. It will be mailed to your address for $1. Write the
Technical Book Department, Address Farmers' Magazine

EARN MORE MONEY

YOUR SPARE TIME IS WORTH money to you. You can easily earn enough to pay all your extra needs. Think what a saving this means to you. Perhaps you could work for us one full day—right in your own vicinity—your earnings for that one day should convince you that your spare time will make you money. Our plan is simple. We will authorize you to collect the many local orders for renewal and new subscriptions to MacLean's Magazine and Farmers' Magazine. The orders come quickly—the profits are liberal. A postcard will bring details—send it now to Agency Division, Farmers' Magazine, 153 University Ave., Toronto, Ont.

MORE DOLLARS

YOU CAN MAKE "DOLLARS GROW" out of your spare time. Spare-time efforts have made hundreds of dollars for Farmers' Magazine Representatives. To-day there are in Canada men and women who find that our proposition worked for an hour or two daily provides for many of the added luxuries of life. You supply us the time—we'll supply you the money. Write for full particulars. The MacLean Publishing Company, Limited, Toronto.

CLASSIFIED ADS. GET RIGHT DOWN TO DIRECT RESULTS. TRY ONE IN THIS PAPER. FOR RATES SEE TOP OF THIS COLUMN.

Made in Canada

Ideal Fence

Freight-Paid Prices

Direct from Factory to Farm

Our Guarantee:

IDEAL FENCE is guaranteed to be exactly as represented. If you are not satisfied with "IDEAL," send it back at our expense, and we will return your money. This guarantee covers everything—no conditions, no loopholes.

REFERENCE: ANY BANK OR BANKER.

Fence, Farm Gates, Brace Wire, Barb Wire, Etc.

Freight paid to your nearest railway station (except electric) on all orders of $15 or over. Remit by Bank Draft, Post Office Order or Express Order.

Heavy "IDEAL" Fence

Made throughout of Full Gauge No. 9 evenly Galvanized Hard Steel Wire. Carried in stock in 20, 30 and 40-rod rolls.

No. 4330 4 line wires, 33 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 11, 11, 11. Per Rod..... **30c.**

No. 5400 5 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 10,10, 10, 10. Per Rod..... **37½c.**

No. 6300 6 line wires, 30 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod..... **42c.**

No. 6400 6 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 9. Per Rod..... **43c.**

No. 7400 7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod..... **49c.**

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No. 8420 8 line wires, 42 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6 , 6, 6, 6, 6, 6, 6. Per Rod..... **56c.**

No. 842 8 line wires, 42 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod..... **61c.**

No. 8470 8 line wires, 47 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **58c.**

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No. 948 9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6, 6. Per Rod..... **69c.**

No. 9481 9 line wires, 48 inches high, uprights 13 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **77c.**

No. 9500 9 line wires, 50 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **63c.**

No. 950 9 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **69c.**

No. 1050 10 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3½, 4½, 5½, 6½, 8, 8, 8. Per Rod..... **75c.**

MEDIUM HEAVY "IDEAL" FENCE

Made throughout of Hard Steel Wire, evenly Galvanized. Carried in stock in 20, 30 and 40-rod rolls.

No. 630 6 line wires, 30 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod..... **30c.**

No. 641 6 line wires, 41 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 10. Per Rod..... **31c.**

No. 6410 Same as Style No. 641 with uprights 22 inches apart. Per Rod..... **29c.**

No. 726 7 line wires, 26 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 5, 6. Per Rod..... **34c.**

No. 7261 Same as Style No. 726, but with uprights 8 inches apart. Per Rod..... **40c.**

No. 7266 Same as Style No. 726, but with uprights 6 inches apart. Per Rod..... **45c.**

No. 834 8 line wires, 34 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4, 5, 6½, 8. Per Rod..... **42c.**

No. 936 9 line wires, 36 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized Spacing 3, 3½, 4, 4½, 4½, 5, 5½, 6. Per Rod..... **43c.**

No. 949 9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **48c.**

No. 1150 11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod..... **54c.**

No. 1448 14 line wires, 48 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 5½, 6. Per Rod..... **64c.**

"IDEAL" Poultry Fence

Top and bottom wires No. 9, all others No. 13. Carried in stock in 10 and 20-rod rolls.

No. 1848 18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod..... **80c.**

No. 2060 20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5, 6, 6. Per Rod..... **88c.**

"IDEAL" Lawn Fence and Lawn Gates

Write for Price List and Catalogue.

Improved "IDEAL" Farm Gates

Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

Length, feet	Height, inches	Price
3	36	$3.15
3	42	3.30
3	48	3.40
3½	36	3.30
3½	42	3.40
3½	48	3.75
4	48	4.00
10	36	6.75
10	42	7.00
10	48	7.25
12	42	7.25
12	48	7.75
13	48	8.00
14	48	8.25
16	48	8.75

Improved "IDEAL" Stock Gates

Wire filling No. 9 throughout, same as Heavy "IDEAL" Fence. No fence filling used. Each wire put in by hand.

Carried in stock in following sizes only:

12 feet long, 51 inches high, each	$7.25
13 feet long, 51 inches high, each	7.50
14 feet long, 51 inches high, each	7.75

Fence Supplies, Brace Wire and Barb Wire

Ideal Steel Posts, 1½ x 1½ x 7′ long	$0.55
Ideal Fence Stretcher, each	9.00
Hand Stretcher, each	.75
Universal Post Hole Digger, each	2.75
Galv. Staples in 25-lb. boxes	1.75
Galv. Staples in 100-lb. boxes	6.75
No. 9 Brace Wire, per 25 lbs	1.50
No. 9 Coiled Spring Wire, per 100 lbs	5.75

Barb Wire

4-pt. 4″ Galv. Cabled, per 100 lbs	$6.00
4-pt. 6″ Galv. Cabled, per 80-rod spool	5.10
2-pt. 5″ Galv. Cabled, per 80-rod spool	4.85

N.B.—Prices quoted above apply to Old Ontario only, stations south of North Bay. Freight-paid prices to points in New Ontario and elsewhere quoted on application.

IDEAL FENCE AND SPRING COMPANY OF CANADA, LIMITED

1150 McDougall Street - WINDSOR, ONTARIO

(Formerly The McGregor-Banwell Fence Co., Limited, Walkerville, Ont.)

FARMERS

MAKE your banker your financial adviser. Let him help you to shape your affairs so that he will be warranted in giving you ample credit to operate your farm efficiently. Our aim is to assist you in every way possible.

THE CANADIAN BANK OF COMMERCE

2A

1869 1919

THE ROYAL BANK OF CANADA

Capital Paid-up $14,800,000

Reserve Funds $15,900,000

Total Assets, $420,000,000

This Bank, with its large resources, and its chain of 500 branches from Newfoundland to the Pacific Coast, offers a COMPLETE BANKING SERVICE to the Canadian Farmer, Rancher, Dairyman, etc.

FARMERS' ACCOUNTS SOLICITED

The Great-West Life

is noted for the Dividends paid to Policyholders. The following is typical of Dividends being paid this year:

TWENTY-PAYMENT LIFE POLICY FOR $1,000.00

Issued 1899. Matures 1919
Age 30. Premium $30.06

Cash Value at Maturity	$ 801.00
Total Premiums paid	601.20
Excess Return	$ 199.80

The Policyholder was protected by $1,000 Insurance during 20 years and at the end of that period the cash value constituted not only a return of all premiums but in addition a splendid surplus. Such remarkable results are worthy of attention.

Ask for Rates at your own age, and examples of other Maturities.

THE GREAT-WEST LIFE ASSURANCE COMPANY
Head Office -:- Winnipeg

HE DIDN'T NEED INSURANCE!

His Widow Had to Sell the Home

An Excelsior Policy will take care of that mortgage on yours.

Excelsior Life Insurance Co.

Write to-day for specimen policy and literature

Head Office, Toronto

STEVENS' BLOOD, BONE AND POTASH FERTILIZER
A COMPLETE FERTILIZER
Analysis:-2 Ammonia, 6 Phoc. 2 Acid, Potash, 30 Lime
Write for price delivered to your station
George Stevens, 364 Mark St., Peterborough, Ont.

Investments & Insurance
For the Farmer

The Bond Market Quiet

By J. W. TYSON, Editor *Financial Post*

THE bond situation continues quiet. Farmers are taking more interest in their investments since the Victory bonds have taught them the safety and investment values of this kind of business. Of late there has been very heavy investment buying of Victory bonds, but it must not be overlooked that absorptive powers of the market are very great. A supply of bonds which might have been adequate to meet all needs only a few years ago would now fall far short of requirements, owing to the peculiar position of the country's business. Funds are not finding an outlet in the many channels of activity that used to be open for them and are contracting largely towards the one opening of bond investments.

A glance over the list of new flotations since the first of January shows several fair-sized provincial issues, a few large city issues and a limited number of smaller municipal and school district issues. Apart from the provincial issues it may be said that the supply of municipals has been decidedly short—in fact much less than was expected at the first of the year. In Western school and telephone issues, which used to come forward in fairly large volume, there is also a marked shortage. Even the industrials are not as numerous as had been anticipated owing to the postponing of expansion programs until conditions become more settled. All along the line, therefore, there is a shortage and as older issues, which have been extensively traded in of late, get salted away, the stringency will become more acute.

Prospects For Firmness

Another cause of the present quietness is to be found in the United States situation. Such buying of Canadians as was carried on across the line has largely petered out with the approach of the Victory Loan campaign and the Canadian market is without the incentive produced by activity in the American market. There is also the natural tendency for the bond market to quiet down periodically. This is a good sign, for it enables that solidifying and stabilizing of the position which is always desirable in building up a strong market.

The outlook is for firm prices. There is little indication of any increased bond supply, at least for some time to come. Meanwhile on May 1 from $18,000,000 to $20,000,000 will be disbursed in the form of Victory Loan interest and of this a goodly portion will undoubtedly be reinvested. While a new loan is inevitable in the fall, the probability that it will be a five per cent. taxable bond should have the effect of still further enhancing the value of outstanding bonds.

EARLY SAVINGS OF DOUBLE VALUE

By John Kyle

SHE was a bright, little country school teacher. She had suitors in plenty. Her delight was to dress well and to do her day's work. Necessity had never shown its fangs in her life. Her parents were well-to-do, and when she married a fine mechanic and contractor his liberal income seemed to insure her against all want.

Twenty-five years passed and the bright young school teacher was a woman of fifty. Then came the husband's long illness ending with his death. When all was over she found herself penniless. All had gone but her education and even that was in need of burnishing.

Courage, too, remained with her, and she set to work as an agent. Kind friends helped her. Twenty years passed and when she was seventy she found that she had saved enough to eke out a precarious old age, if she suffered no financial reverses. Yet, look where she will, there is the haunting fear of want in her last days. She has a few thousand dollars laid up, but they work pitifully slowly for her. She is obliged to count her last penny. Anything like a luxury in food, in dress, or in room accommodation, is out of the question. "Nobody wants to have with them an old woman who may be sick at any time," she sadly tells us.

Where this woman and her husband made their mistake was in their failing to save when they were young and hardships were a delight as much as anything else. If, during the years this woman taught school, she had resolutely set herself to banking two hundred dollars per year, on her marriage day she would have possessed fifteen hundred dollars. If that amount had been set aside to work for her in good bonds at six per cent. till she was seventy years of age, that sum would have meant comfort and elegance to her now. The dollar saved when she could have so well spared it would be doing double duty for her in these strenuous days when old people find their situation bordering on the desperate.

VICTORY BONDS—HOLD OR SELL?

I notice in the Globe *of April 8, under the head of "Topics of the Day," one writer says Victory bonds will be 114 (on a 4 per cent. basis) in 3 years.*

I am paying interest on money at six per cent. I have $600 in Victory bonds due 1933. Would you advise me to sell them at the present and pay what I owe? I got the bonds given to me.

Answer.—It is quite generally believed that Victory bonds will enjoy a substantial appreciation in value as time passes and it is quite within the possibilities that the 1933 bonds may be selling around 114 in three years' time. If Dominion taxes are increased, the tax-free feature of the bonds will continue to make them very attractive and will tend to raise their value. Also, with money becoming more plentiful, interest rates will fall and bond values will rise.

If you are assured that the price of your bonds is going to rise, a decision on policy should not be difficult. Assuming that your loan is for $600 at 6 per cent., it will cost $108 to carry it for three years. In the meantime your bonds bring in $99 in the same period. If you sell at the end of three years at 114, you wipe out your loan and have $84 to the good. Adding this to your interest and deducting carrying charges, there remains $75 as a sort of profit on the operation. On the other hand, if you sell now say at 104½, and discharge your loan, you clear $27. Investing this at 6 per cent., you would have about $32 at the end of three years. Obviously the former course is the more profitable, though its advisability depends entirely on the assumed increase in value of your bonds. In other words, your loan is a fixed quantity, while your bonds are susceptible of increase. By selling out now you lose the advantage of a possible increase in your capital.—W. A. C.

FIRE INSURANCE PRECAUTION

NOW that the summer time is coming again, farmers should take all precautions to see that all farm buildings and livestock as well as their cars and tractors are covered by insurance against fire. Where one has a big investment in buildings it is an unsafe proposition to risk a crippling loss, when at an annual premium of small proportions a policy covering all can be secured. It is good policy to do it now.

A Call for Greater Production

Great Britain's Need is Canada's Opportunity—Egg and Poultry Export Demand is Unlimited—230,000 Dozen Canadian Eggs were Moved for Export March 12th to 31st—Business was Offering for as Many Cases but Supply was not Available.

Aim for 100 Laying Hens on Every Canadian Farm

Pure breeds of laying strains—eggs and meat are the Poultry Producer's objective.

Remove non-producers—do not have any boarders—consult the Government Officers on Flock Improvement Methods.

Only early hatches will give maximum profits—winter eggs give greatest cash returns—have pullets laying in November.

Destroy all unhealthy birds. Disease spreads rapidly, causing heavy loss. Keep houses sanitary. Prevention is the best cure.

Uniform methods are essential. Hens are creatures of habit. Help them to get the laying habit—it will pay you.

Canada is good for poultry. No country in the world is better able to produce eggs and poultry. Climatic conditions are ideal.

Every farm should have 100 laying hens—75,000,000 hens for Canada. This is a possibility and also a probability if you do your share.

Volume, Quality and Co-operation

Market regularly and frequently—Do not hold eggs; they deteriorate rapidly; bad eggs have no place on the market.

A dirty egg case and dirty fillers cause heavy losses. Quality always commands a premium.

Remove male birds after the breeding season; fertile eggs incubate in the sun's heat.

Keep eggs in dry, cool place. Exposure to heat and contaminating odors should be avoided.

Eat the very small eggs on the farm. Weight is a determining factor in grading.

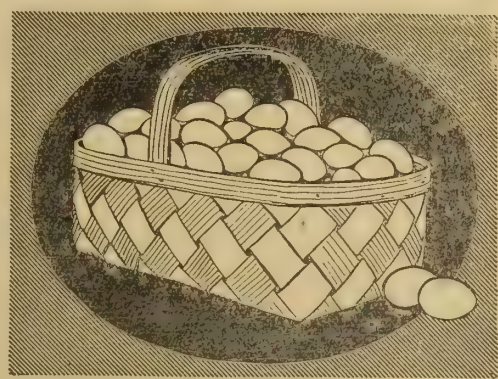
Train the children to handle the poultry flock and you will have solved the labour problem. Co-operate with other producers in your locality. Volume, quality, and co-operation with standardization and advertising will help the hen to pay our war debt.

Produce Economically through Flock Improvement

Export Shipments are Protected by Government Inspection

Free Literature

The Department of Agriculture has information for free distribution on all phases of eggs and poultry production and marketing. Candling appliances are also available. Copies of the Egg Regulations under the Live Stock and Live Stock Products Act may be had upon application. Write for these free publications—the service is yours—make use of it.



Markets Intelligence

Daily and Weekly Egg and Poultry Markets Reports are issued by the Poultry Division of the Live Stock Branch, Ottawa. These are distributed free on application. A tri-weekly market report service is available in the Western provinces, Winnipeg being the distributing point for Manitoba and Saskatchewan, and Edmonton for Alberta and British Columbia. These reports cover prices prevailing at the large market centres.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA CANADA

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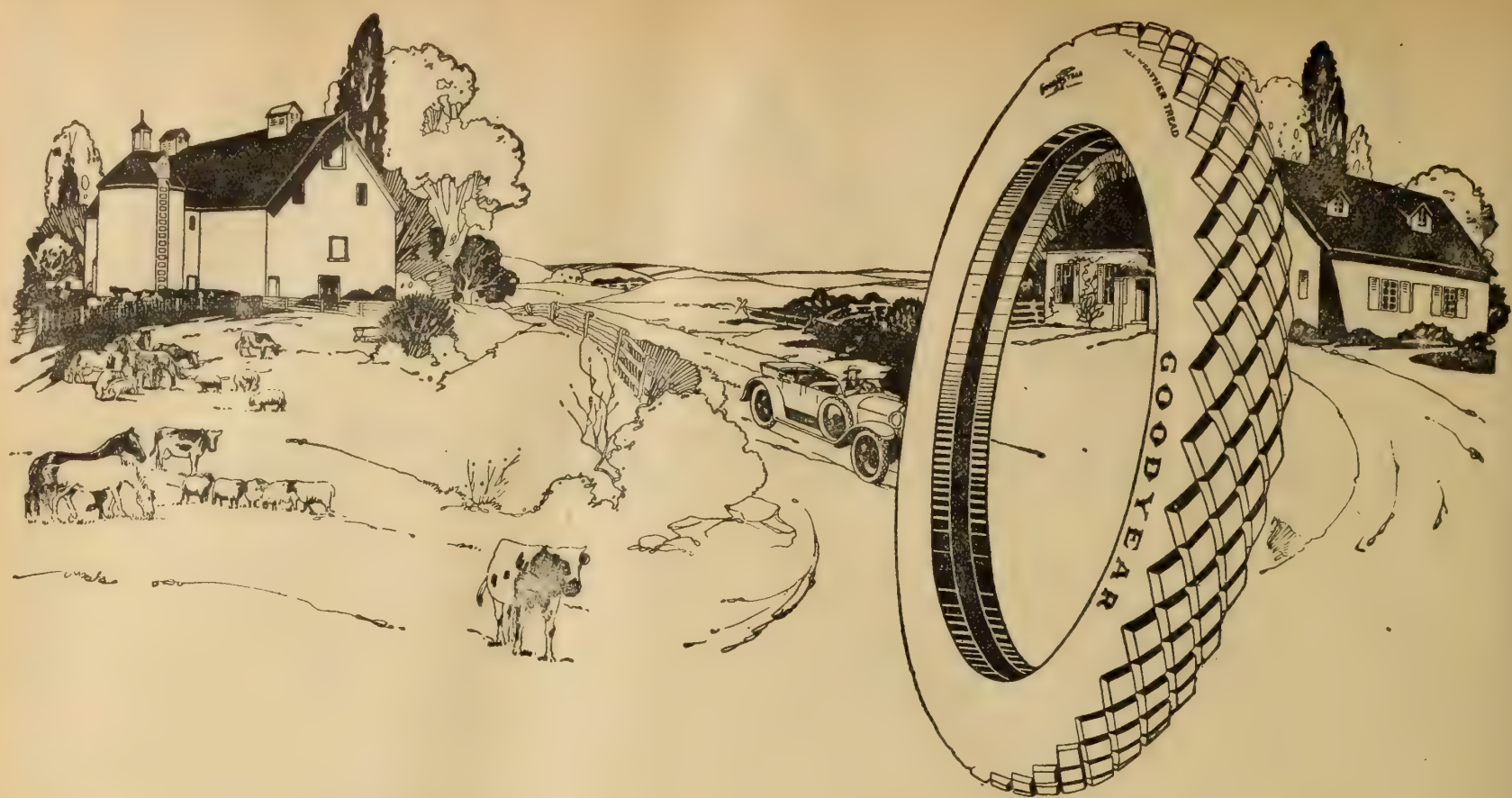

You Can't Feed Your Stock on Straw

Straw costs a lot less than hay and grain—until you feed it to your stock. Then the cost of straw shoots up—in lost stock and in sickness.

Tires are just about the same. Lots of tires are priced lower than Goodyears. It's pretty hard to resist that low-price bait—until it's time to buy another tire. Then you wonder how you wore out that tire. It didn't *wear out—it gave out.* Wear was never put into it.

Few car-owners frown when a Goodyear Tire finishes its service to them. They have learned what we mean by lower tire-cost-per-mile. They lay aside a Goodyear Tire with much the same feeling with which you turn out to retiring pasture a horse which has served you long and faithfully.

Value delivered. That is the one big reason why you see the diamond-shaped track of the Goodyear All-weather Tread on roads everywhere. Why the motorists of the world buy more Goodyear Tires than any other brand.

Next time you drive into town, stop off at the Goodyear Service Station. Learn there why Goodyear Tires are economical equipment for your car.

The Goodyear Tire & Rubber Company of Canada, Limited

GOODYEAR

MADE IN CANADA

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. MAY 1, 1919 No. 9

WHAT ABOUT OUR WHEAT, WOOL, CATTLE AND HOGS

By THE EDITOR

TO the man in the arm chair, the pocketing of $445 from one litter of fat hogs, looks like easy farming. Likewise when the city dweller has to pay 70 cents for butter, 40 cents for beef steak, and $65 for a suit of woolen clothes, he brushes aside the cobwebs from the forgotten corners of his memory, and takes a trip back to his early days on the farm when butter sold for 18 cents, eggs for 10 cents, beef on the hoof for 4 cents and wool was hard to market at 18 cents a pound.

The natural conclusion he is apt to draw is that the farm job he left has become a bonanza to him, somewhat like "Californy" to the forty-niner. "Surely," he reasons, "there must be some joy in farm finances at present. The farmer is having his innings and I don't know but that I am glad he is for he has worked under a mighty bad handicap long enough and his business is a real man's job at any time."

I have had occasion, during the last few months, to hear of many farm returns and of getting first-hand opinions on how the farmer feels under its new order of prices. To me, our farm population divides itself into three classes. First, those who believe in farming as the best business and the most enjoyable existence under the sun. Farming is their business first, last and all the time. All improvements must be in the nature of better methods, better surroundings, better livestock or field crops, but withal a solid belief in their job. This class constitutes the real vertebrae of our national life.

Another class is best represented by the retired farmer. He is looking forward to a time when he can retire from the strenuous farm management and become, as it were, a rail bird in some nearby village or town. Circumstances of family life may have created the siuation for him. He is not all to blame.

And the third class. is that easy go-lucky farmer who easily adjusts his expenditures to his income; is a tenant farmer generally, and never thinks of accumulating even enough to buy a farm of his own. This class, though not as numerous in Canada as in some other countries, nevertheless is the farm jetsam and flotsam—fairly good fellows that's all!

And neighborhoods differ in timbre as the musicians say. Prosperity is contagious and even with some poor soils, respectably well-off people form a most estimable social group. In other parts, even with a rich clay soil, disintegration has turned the once prosperous concession into one of abandoned houses, pasture farms, and a heterogeneous neighborhood. The countryside shifts and moves like the sands of the shore line of the Great Lakes. Five years puts the absentee in many of them almost a perfect stranger.

And so it is hard to generalize on the agricultural situation. We must have on the overalls and smocks if we would know things as they are.

But to come back to prices! What about the future for our wheat, our hogs, our beef and our wool? And it is a question of conjecture with many! A question of shrewd business! With many a plunge in the dark, with high hopes that they will come out on the right side. Truly, during the past four years, farmers required little managerial ability to finance a production proposition. It paid, no matter how poorly the plans were laid.

Thatching wheat stacks on an English farm by the first man in the photo, now living at Norwich, Ont.

To-day when one has to pay even as high as 14 cents a pound to put steers on grass; to sow $2.25 wheat on good fields, to reap possibly a much lower price; or to breed sows to farrow in the fall when pork prices may drop to a much lower level—requires on the part of many careful figuring. Others simply follow what wise ones are doing and trust to luck.

It must be remembered that one can go broke as quickly in stock-feeding as in the stock market. It is on the same plan—both are a gamble. Striking a bad market with stock which cost too much in the first place, and too much to make them, will wipe out your year's work, and you will have to wait another year before you can attempt to regain any of your losses. The best the wisest can do, is to study all the facts and have courage enough to go ahead.

The Wheat Situation

Uundoubtedly the wheat situation is the one that is looked upon as the biggest index of future prices. With American wheat guarranteed at $2.26 and the British farmer's fixed at $1.73, the Canadian farmer feels that his prices must of necessity run pretty close to the American figure.

Two factors, that make future prices doubtful are, the big American winter wheat crop in sight, the Australian and Argentine supplies, and the congestion of ocean traffic and our Canadian ports.

The question has been raised also, as to whether we are able to finance our crop.

Europe may not pay cash. It will be totally impossible for individuals to finance the crop, and since wheat was practically a munition of war, with fixed prices the onus is clearly upon the Government to handle the product at no appreciable loss to the producers. Unless crop scares develop during the growing season the problem will become acute as time advances. The United States expects the biggest wheat crop in her history, perhaps a billion bushels, with a possible export of 600,000,000 bushels. Such an outflow would be more than all the American and Canadian ports ever shipped even in the record war-time year when the tonnage at their disposal was an exceptionally large proportion.

The feeling among Canadian farmers generally is that wheat will be a good price in any event, and spring acreage nearly as large as last year is likely to be sown. Fall wheat is coming through in fine shape although this crop is almost negligible in Canada.

Others see in the India famine, and the European demand, a removal of all Australia's wheat into Eastern consumption so as to remove the menace of that competition. Argentine crop is so far away and, the costs of its production being enhanced, it is likely that this will not be as much of a competing factor. Should a poor harvest result in the U.S. and Canada, the world might be in a bad way for wheat again. To many there is no ground for alarm, and some even advance the argument that Canadian farmers are better without a fixed price. At any rate a great many farmers are in a position to hold if need be for better prices.

—British Official Photograph.

Italians return to their homes and prune the vines, beside the Austrian graves.

The Wool Situation

Canada has increased her flocks during the war period. The high prices paid for wool and mutton have stimulated the business. Prices for mutton have been going up recently. High prices for lambs and yearlings have prevailed at all American and Canadian markets for some time although the trade has weakened since the middle of April. Mr. Poole outlined the sheep situation fairly well in our last issue, summing up the sheep business in these words: "High prices for sheep and lambs until July, with an abrupt drop in values during the last half of the year. There seems to be

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Burbank Remakes Flowers and Fruit

By R. R. FLEMING

STANDING in front of Luther Burbank's house at Santa Rosa is a single row of trees. They are the results of some experiments he has made in crossing English and California walnuts. Following a series of crossings in the nursery, a few were planted outside and left more or less to shift for themselves. In fourteen years they were eighty feet high with a trunk two feet thick and lowest branches fully fifteen feet above the ground. The trees are now like any other walnuts, only of a superior nature. These trees are of particular interest because they stand in comparison with some other walnut trees just across the way which in thirty-one years stand now only twenty feet high. In other words Burbank's walnuts grew just six times as large in just half the time. He has developed another fast growing walnut that will grow anywhere in the United States, or any other country where the hardy New England black walnut will grow. The possibilities in this line of work, for commercial purposes alone, are scarcely credible.

I suppose it is Burbank's genuine love of nature and her wonderful sights that has led him to devote so much of his time to the development of flowers. His work here has been no less wonderful. Nothing seems to have given him such pleasure as the taking hold of some such common flower as the daisy and developing it into wonderful proportions, depths and variety of colors. He has taken the foul scent away from the dahlia and left in its place a gorgeous perfume—"A Rose without a thorn" has been hitherto an expression of the impossible—but with Burbank all things are possible; and he has proven that roses can grow just as easily without these objectionable accessories. So he has gone on with one production after another—always bringing forth some new form to astonish an incredulous world—a world that, from a purely aesthetic point of view will always be more beautiful because of his having lived.

In the realm of fruit, his improvements have possibly been of most immediate benefit to his native and admiring state. No doubt owing to the fact that his early successes were won in growing plums, he has always had a peculiar delight in carrying them to farther developments. Side by side with his work with the plum has been his work with the prune. So successful has his culture of prunes been: so large their size, so rich their flavor, so exquisite their color and so enduring their keeping qualities that French prune growers find it pays to buy Burbank's California prunes—have them shipped to France, pay the freight and expenses of giving them their own methods of treatment, re-pack them, pay freight charges once more on a return trip to the United States and sell them as prime French prunes. Out of his handiwork have been set up hundreds of plum orchards in California, each of which has made many dollars for its owners. And now his further developments along these lines are threatening to deprive his native state of its much vaunted supremacy; for he has so hardened the plum and prune and adapted it to other conditions, that other states are finding it equally possible of growth. Moreover, a stoneless plum which he has almost completed is soon to revolutionize the whole plum growing industry. In crossing potatoes and tomatoes he has obtained some exceedingly interesting and valuable results. Of one of these—the pomato—he expects great things. Berries of all kinds too have received his attention. In fact, his work in each one of these lines would be sufficient to make the reputation for half a dozen ordinary men.

Soil will produce a half ton or so per acre in a season of wild grasses, or it will produce tons of cultivated alfalfa. One crop is too worthless to harvest—the other one of the most remunerative the agriculturalist possesses. And I suppose it was an appreciation of this fact and its commercial importance that has led him to conduct experiments with different kinds of grasses. If you visit his home, you may see them. Some growing an inch high, others a foot. What makes the difference? Merely the fact that the individual plants follow a line of other plants of the same kind that have always grown in the same way. If allowed to reproduce themselves in their old time way, the same results will continue to follow. But right here Burbank steps in and by his artificial and arbitrary methods, takes the pollen from a strong plant and unites it with a weaker one. Then by continuing a definite plan for six or eight generations, a peculiar characteristic or number of characteristics that he wishes to develop, becomes so fixed in the plant that it will continue to reproduce these new qualities when left alone. Other experiments of his have been carried along the lines of developing field crops, but if anything will stand out above all else that he has accomplished it will be his work with the cactus—a line that he has been developing for years. A cactus, you say! What does Burbank intend to do with a cactus—that ugly, horny good-for-nothing plant that grows where nothing else will grow? But it is just that very quality of the cactus that has opened up to him a conception of what part it might play in the world. Hitherto its spines have stood up boldly, challenging with success the whole world of preying animal and vegetable life. So the spines must go. It may take five or ten or fifteen years, but off they must come. And after a dozen or so years of ceaseless toil, off they have come. Hitherto in its wild and desolated state it has had to defend itself. So the leaf has spent its energy throwing out these thorny projections; but in the new order, man will be its protector and the leaf will devote itself to storing up in its tissues rich and nutritious food. Those who have investigated the cactus say that its feeding qualities are secondary only to alfalfa: that it bears fruit second in its eating and preserving qualities to none other; that its flower would not be out of place in the garden of an exclusive horticulturist; and that the plant has been so hardened as to grow in any reasonable climate. What does all this mean? It means that the two billion acres on the Globe—the six thousand square miles of barren and desert waste that have, down through the ages, thrown out this challenge to civilization have been conquered. Practically all of this territory can, if need be, be reclaimed by the cactus. Is it any wonder, in face of this, that the world has followed the lead of its most eminent statesmen and scientists, in literally wearing bare a path to study and examine the work of such a benefactor? Whom else could Burbank's own friend Emerson and his favorite poet have been thinking of when he gave expression to that most famous of all American quotations: "If a man write a better book, preach a better sermon or make a better mousetrap than his neighbor, though he build his house in the woods, the world will make a beaten track to his door."—And what farmer's son, in the face of this example, will ever again turn his steps to the city because there are no opportunities?

Not long ago the Literary Digest, in drawing a comparison between Edison and Burbank, pointed out the fact that while both had apparently risen to an equal pinnacle of success, the former had grown wealthy while the latter had run nearly a quarter of a million dollars behind. Certainly it is not because Burbank has not opportunities to accumulate vast wealth; he could have made millions. An editorial writer in "Enginering and Contracting" sees in this peculiar fact "a lack of selling organization," and the chief factor in the success of any such organization—"publicity." "Here is a man," he says in reference to Burbank, "who is one of the greatest geniuses and benefactors of the human race that any nation has produced since the first great engineer invented the wheel and the axle. He is, indeed, the pioneer engineer of the vegetable kingdoms, the inventor of new forms of plant life, and a wonder-worker as great as Edison. Yet Edison's name is a household word, and his inventions are, like his name, in almost every American home; whereas Burbank's name is still little known and even farmers of greatest intelligence scarcely perceive the tithe of the miracles that Burbank's products could be made to perform. Why does this difference in celebrity exist? The question is of more than academic interest. Its answer, in fact, points to the very nucleus of the seed of progress. Edison is little older than Burbank, but early in life he saw the value of advertising; and he became one of the most persistent of advertisers. His name was upon all his products and his products were advertised in almost every conceivable way. He became first a national and then an international figure. As inventor of the incandescent electric lamp, of the phonograph, and of the moving picture, Edison is not a bit greater than Burbank, the man who first crossed one species and then one genus of plant with another, who discovered that hybridization leads to great variation of offspring, who invented the spineless cactus, the stoneless plum, the Burbank potato, the Royal walnut, the winter rhubarb, the plumcot, the loquat, the Burbank cherry, the Test pear, etc. Burbank states that up to the year 1912, his inventions and experiments cost him $250,000 during thirty years of continuous work; and that the income from the sale of all his new varieties during that time had been only $100,000. In short his plant inventions had left him out of pocket $150,000. Yet, for example, the orchardists of California annually ship more than $500,000 worth of Burbank plums, which are less than half as expensive to raise as were the French plums which they displaced." And he says, "The Burbank plums and prunes have earned money for every one except their originator.

"Contrast profitless Burbank with wealthy Edison and ask yourself the reason. It is true that Edison could patent his inventions, while Burbank could not; but Edison has often asserted that his patents were not the source of a great part of his profit. It is true that Edison's invented products could not reproduce themselves, while Burbank's could; but on the other hand, once Edison has produced a new device, almost any skilled mechanic can make a similar one; whereas the secret of the origination of one of Burbank's new fruits or plants remains with him till he chooses to disclose it. In brief, the possession of patents does not in itself explain Edison's greater financial success. To us it seems clear that what Edison had, that Burbank lacked, was a selling organization, and that the chief factor in the extensive selling of any product is publicity, particularly that kind of publicity that may be caled educational advertising."

Possibly the explanation of this is to be found in the fact that he has been so absorbed in his work—has received so much pleasure therefrom, that the other pleasures seemed quite inconsequential. Of what use anyway is money to a man like Burbank? He has surrounded himself with everything that is worth while. Friends have gathered about him—true friends and sincere admirers. His fame has spread to every shore. And when he sits down to a meal provided from the luxurious bounties that adorn his garden, one does not imagine him sighing for the gaudy and comparatively tasteless food that is found on city menus.

It is fortunate that outside agencies have stepped in to help him carry the financial burdens. Some fifteen years ago the Carnegie Institute was formed to help and encourage just such men as Burbank—men who by the assistance of a subsidy would be enabled to make valuable scientific contributions to the world, that under other circumstances would be impossible of attainment. And so a fund of one hundred thousand dollars was placed at his disposal—ten thousand a year for ten years—and I imagine money has never been put to better use.

Not Half Dead But All Alive

By BURBANK

"My theory of the laws and underlying principles of plant creation is, in many respects, opposed to the theories of the materialists. I am a sincere believer in a higher power than man's. All my investigations have led me away from the idea of a dead material universe tossed about by various forces, to that of a universe which is absolutely all force, life, soul, thought, or whatever name we may choose to call it. Every atom, molecule, plant, animal or planet, is only an aggregation of organized unit forces, held in place by stronger forces, thus holding them for a time latent, though teeming with inconceivable power. All life on our planet is, so to speak, just on the outer fringe of this infinite ocean of force. The universe is not half dead, but all alive."—BURBANK.

Can a Tractor Run a Thresher?

By R. D. A. DRUMMOND

NOW that small tractors are getting popular from Toronto to the rocky country up North and from one ocean to the other, tractor owners are pretty sure to get the threshing bug and then their trouble *will* start unless they do a little studying and use good common sense before buying a separator. If a man finds out what he wants and gets it, I don't see any reason why he shouldn't use his tractor for threshing.

The one big thing to remember when you want a real honest-to-goodness thresher, is that a threshing machine won't make a clean job of threshing unless it is kept running at its normal speed. If you run too fast, you blow it over, and if you run too slow you carry too much and just naturally drop it over, and if your speed's going up and down it goes over anyway. In fact, it doesn't matter whether you blow it over or throw it over or carry it over, it's wasted anyway and wheat isn't to be wasted any more.

You can't keep the speed of your separator speed steady *unless you have the power to drive it* regardless of what kind of grain you put into it. Any engine can be coaxed to drive a too large separator when the grain is in fine shape and the engine is working its best, but the engine doesn't last long with this sort of treatment and, the first time you strike some tough threshing, over goes your grain and what you do save isn't threshed clean.

A war-time scene where women have manned the whole outfit although the engineer seems to be quite unoccupied. Perhaps this is due to the easy way a tractor runs when the cylinder is empty. But tractors are threshing in many parts.

I remember when I was inspecting, I made a long cold trip, when the snow was on the ground, to an outfit with a 10-20 and a 26-46 separator. The engine was giving trouble and broke spark plugs about as fast as they could be put in. When I arrived, I tore the motor to pieces and the whole trouble was, overwork. When I finally convinced the fellow that he shouldn't feed an oversized separator to its capacity, he got along all right and everything went fine but I had a hard time convincing him.

Another fellow sent in a hurry-up call for somebody to come out and show how to make his separator thresh clean and not put half the grain in the stack. He threshed about half a load of grain while I watched him, then I borrowed a larger engine from our dealer and after watching the stuff roll through for half a day, he willingly paid me my price to change engines. *Whatever else you do, get the engine big enough.*

I know that many men will tell you the tractor is not going to make a good threshing power. The whole reason of this is that many men have endeavored to operate big cleaners with a small tractor, which perhaps would not develop as much belt power as they were rated at.

Where individual threshing machines are coming into fashion on Eastern farms, they are necessarily smaller and it will take less power to operate them steadily. And in that case the smaller tractor will have less difficulty in handling the situation.

The operator of an 8-16 gas tractor tells me that he has threshed with a 24-46 thresher with a feeder and blower on, and got excellent results.

What is the Ideal Tractor?

By PROF. L. J. SMITH

Manitoba Agricultural College

HAVING already considered some general points which should be kept well in mind when selecting a firm from which to buy a tractor, enumerated some of the obstacles which stand in the way of more rapid progress toward the ideal tractor and indicated the general lines upon which greater progress may be made, let us now consider the main points of superiority in the tractor design and what we may reasonably expect in the near future.

It is with reluctance that one enters into a discussion where there is such a seeming difference of opinion as there is in the matter of gas tractor design. However, it may be possible to deal with this subject in a fair and unbiased manner, and to point out, from past experience, many items which will be of value to the prospective buyer.

One should clear one's mind right at the start of the idea that any one make of tractor has all the good points in tractor design. Each of the well established tractor builders have brought out valuable improvements, which, as time proves their worth, are slowly incorporated into the generally accepted standard tractor design.

Beginning at the bottom, it is now pretty well conceded, by those who have been in the tractor game for a sufficient number of years to get well settled down, that the four-wheel tractor is the ultimate type, and it is wise to take the combined result of these foremost tractor builders' experience in this matter. It is yet a question as to whether the caterpillar type drive will strongly compete with the ordinary circular drive wheel. The advantage of the caterpillar lies in its larger distribution of weight which eliminates packing, and the grip on the ground which prevents slipping. The chief disadvantage is the large number of parts in the caterpillar drive and its supports, which depreciate rapidly, owing to the fact that these parts are down in the dirt and mud all the time.

Since so many makes of wheel drive light-weight tractors have proved their worth on the land, using the wheel drive successfully, it is not likely that the caterpillar drive will supplant the wheel drive unless it is cheaper in first cost and upkeep, and reduces the power required to move the tractor. The caterpillar tractor will without doubt have its place in agriculture, and especially when it is to operate on low land.

The next logical item is the tractor frame—and in this discussion we are thinking of the types of tractors most in demand—from 18 to 30 horsepower. The built-up structural steel frame with its vibration and torsion will eventually be superseded by a rigid semi-steel frame which cannot twist or give; and is so made and machined that the motor, transmission, and driver axle will be rigidly and permanently held in proper alignment. By such an arrangement the ordinary operator may take down any part for inspection or repair and put it back without fear of getting it out of proper adjustment. Already a number of tractor firms are recognizing this as the ideal type of frame, and without doubt many other firms will soon follow suit.

More attention is being given to the idea of making each repair part as small as possible. The ideal bearing should run on a genuine babbitt shell or a bronze bushing, or, better still, the roller bearing.

The ideal tractor will have its internal friction reduced to a minimum by the use of roller bearings. It should, like the auctioneer's watch, have "sixteen jewels and holes for more." Roller bearings mean small repairs, minimum friction, and the minimum of lubrication attention. Already the tractor firms are using roller bearings in their late model tractors; and it will be now only a question of a few years when this form of bearing will be universally used.

Following the same line of reasoning, the cylinders should not be thrown away when the bore is worn out of round, but they should have cylinder sleeves which can be renewed at a nominal cost. This will not only be an improvement from the standpoint of the user of the tractor; but should be a more economical design from the manufacturer's side.

Coming to the question of transmission, it is doubtful if we may expect uniformity, for motors will without doubt be set on the frame both crosswise and lengthwise. If the motor is set crosswise, the transmission can be entirely of spur gears, but with the motor parallel to the frame, one set of bevel gears or a worm drive is necessary. The modern high-class cut bevel gears running in oil are no longer considered objectionable, but it is very doubtful if the worm drive will ever be a real success on the tractor. The transmission of power by the worm drive is by sliding contact, which means friction and heat, even when running in oil; and heat means rapid wear and loss of

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Instead of the big 30-horsepower steam engine, the tractor presents a different moving type on the prairies.

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EDUCATION IS OUR ONLY HOPE

THE educated man is one who is on to his job. Education is not always earmarked by degrees or a college education. Education makes a man free. Such freedom is not the freedom of the wild ass, but the freedom of an ordered universe where the stars move in their courses. This freedom is best illustrated by the instance of the man who went down the street exercising his muscles by arm movements. His fist accidentally came into collision with a man's nose, which was the subject of some protest from the injured man. "I am enjoying the freedom of my country," said the first citizen. "Your freedom ends where my nose begins," was the retort.

Free democracy in any country respects the rights of all other people, each to live his life in the enjoyment of health, wealth and in the pursuit of happiness. The farmer knows full well the meaning of this. Freedom to do as he pleases means going only so far as his freedom does not restrict the freedom of any other man. Line fence troubles and other trespasses, as witnessed in many law courts, are evidences of the lack of a proper education on the rights and freedom of other people.

Most of the difficulties of our national life would pass away if classes would not do their exercising in such a manner as not to hit the noses of other people. Likewise the League of Nations should make this old world a safer place to live in, if nations like individuals would respect the national rights of all others.

Education in our public schools should be more thorough than it is. Every farm boy, whether smart or dull, should be fully equipped for his life's work and for the best development of himself.

There can be no real freedom without education. Farmers can not long lead even a purely farmers' movement if they lack in education. The greatest question before us to-day is the little country school.

A REAL BUILDER

THRIFT stamps afford a very real means of training Canadian children in business habits. Boys and girls like to handle money. The buying of a thing very frequently means more than actual possession. Hitherto, the child has bought things, for the most part, that were of but little use to him. Hence when his money was gone, that was all there was to it, except for the fact that he was so much the poorer. It is different with thrift stamps. The child has the pleasure of buying. He has all the old-time delight in exchange. There is this difference, however. He gets a stamp that he can look at when he likes and he has besides a possession of real value. Further, when the time comes when he can cash in on his stamps, he will have a habit formed that will stand him in good stead for a lifetime.

The boy of ten who has a good hometraining has far more sense than is generally credited to him. He remembers when he was five years of age, and he has no difficulty in looking forward to the time when he will be fifteen, the age at which he settles down to serious work in the High School or takes his apprenticeship seriously. Of this fact alert parents are in duty bound to make a diligent use. A little instruction, a little sympathy and a little firmness and a good business habit is formed.

THE RIGHT NOTE

AGAIN we have the human, sympathetic word of help and encouragement from Dr. Helen MacMurchy in her appeal for the "Backward Child" in this issue. It is a promising evidence of the trend of thought and effort of the women throughout the country that the interest and energy trained and developed in war-work and conservation is being turned so practically to reconstructing and conserving the best we have. The last few years have taken a heavy toll of our strongest , most useful lives; nothing is so important now as to save and save in the perfectness of health and power for service, every life we have left. The war is over, but the women of the country have still a field ripe for organized endeavor—the school, the children, the public health, the social and civic life of the nation. The *Farmers' Magazine* is searching for the best light on these problems from people who know. In our next issue will be published a survey of some of the laws concerning women and children.

THE SOLDIER ON THE LAND

THE Soldiers' Settlement Board report that considerable numbers of soldiers have applied for farms, particularly in the Western provinces. The first question that comes to one's mind is, how many of these soldiers were farmers before enlistment. The information carries little upon which to form any conclusion as to the way the soldier is favoring farm vocations. Nor have we, as yet, any data as to the purchase of farms in the older counties of Ontario and the East, where old farms in grass and others only partially under cultivation can be obtained at very reasonable prices.

Farmers' Magazine has favored the purchase of these old farms rather than the sending of soldiers to New Ontario or to pioneer conditions. These boys have seen enough of hardship. They will not be able to put in a lifetime of clearing a homestead and have any time for comfortable living left.

We believe that farm life offers one of the most attractive of occupations to the returned soldier, who has lived in the open so long, and who knows how to turn the vagaries of weather and circumstance to his advantage. But farm experience must be placed in our older settled districts, sprinkled in amongst the other older farms where the helpfulness of others and the mutual sociability may make our rural life the richer. Every province in Canada offers many such opportunities. Our boys have proved their valor and heroism in Flanders and such courage and enthusiasm turned into our rural society ought to add the pep we need.

JOINS EDITORIAL STAFF

Mr. C. F. Mackenzie, now completing his degree at the O. A. C., has joined the staff of FARMERS' MAGAZINE as associate editor. As one of the successful judging team who carried off from Chicago the honors for Canada, he is already well known to many of our readers. As a livestock expert there are few young men who give greater promise.

Further announcement will appear in the next issue.

CHOOSING A TRACTOR

THE popularity of the tractor, and its first cousin the truck, is increasing throughout Canada. Just as the auto jumped into farm favor, so these sister power machines are advancing fast among all kinds of farmers. Fruit and intensive farmers in all parts are adopting mechanical power generally, while all farmers of 100 acres and over are seriously considering the purchase of a tractor. The labor situation this year has accentuated the demand for the gasoline horse, and success has been the rule rather than the exception.

But a word of warning must be thrown out to tractor owners. Too few farmer operators are impressed with the need of constant personal attention to their tractors and cars. A highly developed type of machinery demands a high order of intelligence in the operator and it is one of the prices we must pay, that we sense a trouble in the machinery before it comes. Proper lubrication is the greatest safeguard. A daily examination of all bolts, gears, and pinions, with protection from the weather, helps much. No farmer can neglect a tractor long with impunity.

The selection of the proper type of tractor requires some little knowledge of tractor designs and one's own needs. Prof. L. J. Smith of Manitoba Agricultural College writes a most sensible article in this issue which should be preserved by all farmers.

EDITORIAL NOTES

THE coal barons are at it early.

MAKE every acre count this year.

THE uneducated farmer can't be on his job at his best.

A MOTHER has more right to her child than has anyone else.

THE livestock farmer still occupies the stronghold of the farm.

ARCHIE McCOIG made the private car fellows do some explaining in Parliament.

BIG machines, more tractors, big horses, and brains are good antidotes for labor shortage.

AFTER all, the farmer has a private car of his own now, thanks to the auto manufacturers.

THE value of land depends entirely upon the people who live on the land. A farm is no poorer than its owner is in ideas.

A SHORTHORN milk cow sold on the livestock market for $200 last week. Some price for a cow that some say does not exist!

THE Ontario Agricultural College is going to erect a memorial hall to the boys who fell. A campaign to raise $50,000 is well under way.

HAVE you tried to get any of the nitrate of soda yet? Why not buy a bag and treat a patch of your new seeds this year and note the result?

EVERY farm boy should be well equipped with an education that gives him the best methods in farming as well as in the fundamentals.

CARELESSNESS in care of machinery on the farm costs our farmers every year far more than the tariff does. The life of a self-binder can be doubled by intelligent care.

PRES. WILSON is having a hard time to break some of the old-time nations of Europe. Secret diplomacy and secret treaties die hard. Unless the idea of the League of Nations prevail, we must get ready for another war.

THE fight for prohibition has begun again. Those who think that it is a good thing for Canada should leave no stone unturned to make the result sure. Business men don't want liquor drinking again. Farmers don't want it. Then who else counts?

KEEP your livestock records well in hand. When one leaves his recording off until a subsequent sale, he gives himself and the officials a needless amount of trouble. Private record books should be kept accurately and should easily identify all the animals.

TITLES must go in Canada. The feeling is growing in Canada that this is no place for a further perpetuation of social class distinctions, howsoever some society leaders and vain men may want them. Had some of the members of the House stood firm, the question would have been settled.

THE "BACKWARD" CHILD

A Message for Teachers, Inspectors and Anyone Else Who Ought to Care

By Dr. HELEN MacMURCHY

This article has been prepared by Dr. Helen MacMurchy as a letter to teachers and inspectors who are troubled by the problem of the "backward" child, and as such is being circulated by the Department of Education in answer to inquiries pouring in daily from all over the province. However, Dr. MacMurchy has such a way of her own of going right to the heart of any human problem, such a clear and sympathetic understanding of both the physical and mental handicaps which may be responsible for a school child's "backwardness" and the ideas expressed here are so practical that the article will be of value to every reader who has a spark of child welfare interest at heart. In addition to this article Dr. MacMurchy recommends the following books to teachers of very backward children: "The Boston Way," published by the Rumford Press, Concord, N.H.; "An Introduction to Special School Work," by Marion F. Bridie, LL.A., published by Edward Arnold, London, Eng., and "Simple Beginnings in the Training of Mentally Defective Children," by Margaret MacDowall, published by the Local Government Press Co. (R. T. Leach), London, England.

YOUR very backward (mentally-defective?) pupil has the same right to education that your other pupils have. It may be that he can learn with difficulty what the other children learn easily. It may be that he cannot learn some things that the other children can and do learn.

Two points must be borne in mind:

First—That he can learn something, and we must find out what that something is.

Second—That every pupil has a right to his fair share of the teacher's personal attention, direction, interest and skill.

It is not fair to the other pupils to continue to give a a disproportionate share to a very backward pupil. If we can, in a short time, advance that pupil so much that he can work with the rest, well and good. If a child, after a fair trial, cannot learn to write, but only make meaningless marks, do not waste your time "teaching him" writing. Do not try to make a rope of sand. If you have forty pupils, you must not give ten per cent. of your time to one pupil, except, as has already been said, as a temporary measure and for good reasons.

Before following out the subject further, two requests may be made. First—Do please keep a School Diary, or what the Doctor calls a Case Book, or what your grandfather called a Commonplace Book. Take at least one page for each child. Of course, you should keep it under lock and key, but then a teacher needs at least one lock and key. The interest of such a book soon becomes fascinating. To put down a brief estimate of your pupils—their good points, characters, endowments—the mistakes you make about them and when and how these were corrected—the prejudices you had and who or what gave you these prejudices—the first sign of real intellectual awakening—it is worth while! It is such a help and stimulus to yourself, and frees you from the deadly enemy Routine, which has ruined more teachers and pupils than we can count! In teaching a backward pupil, such a Case Book is invaluable.

THE second request is—Do, please, ask yourself the question: "Why is this pupil backward?" and find the answer.

Remember that very few pupils are mentally defective. You are Counsel for the Accused. If you can possibly prove that your pupil is not mentally defective, that is the best day's work you have ever done. It is a crime to whisper that any child is mentally defective who may be only backward. Keep silence. A physician, and an experienced and able one at that, is alone competent to make the diagnosis of mental defect. A community diagnosis is a different thing. Where normal people have had one or two generations to think things over they seldom fail to make a correct diagnosis of mental defect, if it is really present. This has been done for centuries. The Scotch expression, "Wanting a penny in the pound," or the brief verdict, "Not all there," are significant of this. When the second or third generation appears in the school-room from such a family, well known in all the countryside, the diagnosis is already made. Our duty then is to find out what the powers and capacities of our new pupil are, and to seek diligently until we find them. But when, in a new class, we find a very backward pupil, or when a new pupil, much over age, is brought to our class, the only question for us is "Why?" What is the cause and the meaning of this backwardness?

The cause of backwardness may be physical, mental, moral, social. It may be in the body, the mind, the nature, the nurture, the parents, the home, the school, society, the state—"For there, too, lurks the enemy."

Beware of giving up the quest before you begin. There must be some reason. And if you, with your professional skill and experience, cannot answer "Why?" it is probable the doctor can help you, and always the school nurse is a very great ally.

Do not allow the attitude of the parents to influence you too much. They may say, "Oh, the doctor cannot do anything." On the contrary, the doctor can nearly always do something, especially the family doctor. Backwardness from bodily causes is very common. Among the commonest of such causes and some remedies are:—

Defective sight—Glasses prescribed by an oculist. (Give front seat in class-room.)

Making relief maps in an open-air school. Some of the delicate pupils in our public schools would profit wonderfully by being out-of-doors more.

Defective hearing—Teach lip-reading. (Give front seat in class-room.)

Defective breathing—Examination of nose and throat by doctor who will advise remedy.

Defective teeth—Teach how to keep teeth clean. Attention by dentist.

Defective immunity—Strengthen the child's "constitution."

Defective nutrition—Good food, fresh air, exercise, sleep.

THESE causes are extremely common. Do you realize that you are responsible for finding them out and doing all in your power to get them remedied? Any one of them may cause your pupil to lose his education or his health, or both, or may make him very backward. if there is no school medical officer and no school nurse, and the parents have not found out that there is anything wrong, then you are the child's only hope for proper attention and a fair chance. Put down your observations and your efforts in your school diary. If your child is pale, listless and easily fatigued, he may be going to bed too late at night, or up too early in the morning, thus losing sleep. Children must have plenty of sleep. They should not be wage-earners, working either before or after school, if it interferes with this. Do you know which of your pupils are wage-earners? Put it in your school diary and do not forget it.

Look at your children from a new point of view as often as you can. You seldom talk to anyone—pupil, mother, father, brother, sister, nurse, doctor, fellow-teacher—about your pupil, without learning something you did not know before. Have you the confidence of your pupils? They know a great many things about this backward pupil that you do not know, and if they are sure you will use this information with proper regard for his views and theirs about respecting that confidence, they will tell you some of these things that they know and you do not.

It may not be loss of sleep. Somebody should know about home conditions. Why not you? You are interested, are you not? The clergyman visits the home. The doctor visits the home. You belong to as important a profession as either. *If you cannot visit all the homes, visit the homes where your backward pupils live, but do not sound a trumpet before you to tell why.* Ontario is rich enough, and will soon be wise enough, to see that—if getting up at 5.00 a.m. to deliver papers, or sitting up till 11.00 p.m. to deliver groceries, or to do chores around the farm, or not having enough to eat, or smoking in boyhood, or living in a one-roomed house, (Some children do!), is spoiling her future citizens—she should change all that and she will. The teacher has a strategic position as a "social worker," and should direct and co-operate in social work.

IT may be some disease. You think the pupil is inattentive and lazy. Perhaps you do not know all the facts. There is such a thing as laziness. But it has happened before now that a child who seemed lazy was really sick. There is no use denying it. *The doctor has a stethoscope to examine the heart and knows a leaky valve when he hears it. The doctor knows the signs of tuberculosis and rheumatism and many another enemy of childhood, whose invasion is so insidious that those who see the child every day fail to realize that anything is wrong.*

Or the problem may be a very simple one. Mary is away now with the whooping-cough and you think you remember she was absent last spring, and look up her page in your school diary—yes she was away five weeks with measles, and when she came into your class in January she had been away for a couple of months with scarlet fever, so your diary says! Is it any wonder that Mary is backward? Here is one of the pupils who deserves "intensive cultivation" in the school-room, if she is strong enough; or, perhaps, special consideration, shorter hours and more sunlight, better food, with an occasional special lesson.

The real reason of the child's backwardness may be very obscure. There is such a thing as school incompatibility. It may be some old, unhappy, far-off feud with some teacher you never saw, but you are the innocent victim of the child's outraged sense of justice—until he finds that you are not unjust. Have patience. It may be that that family have moved seven times in the seven years of the child's school life, and he has given up the struggle to adjust himself to seven dif-

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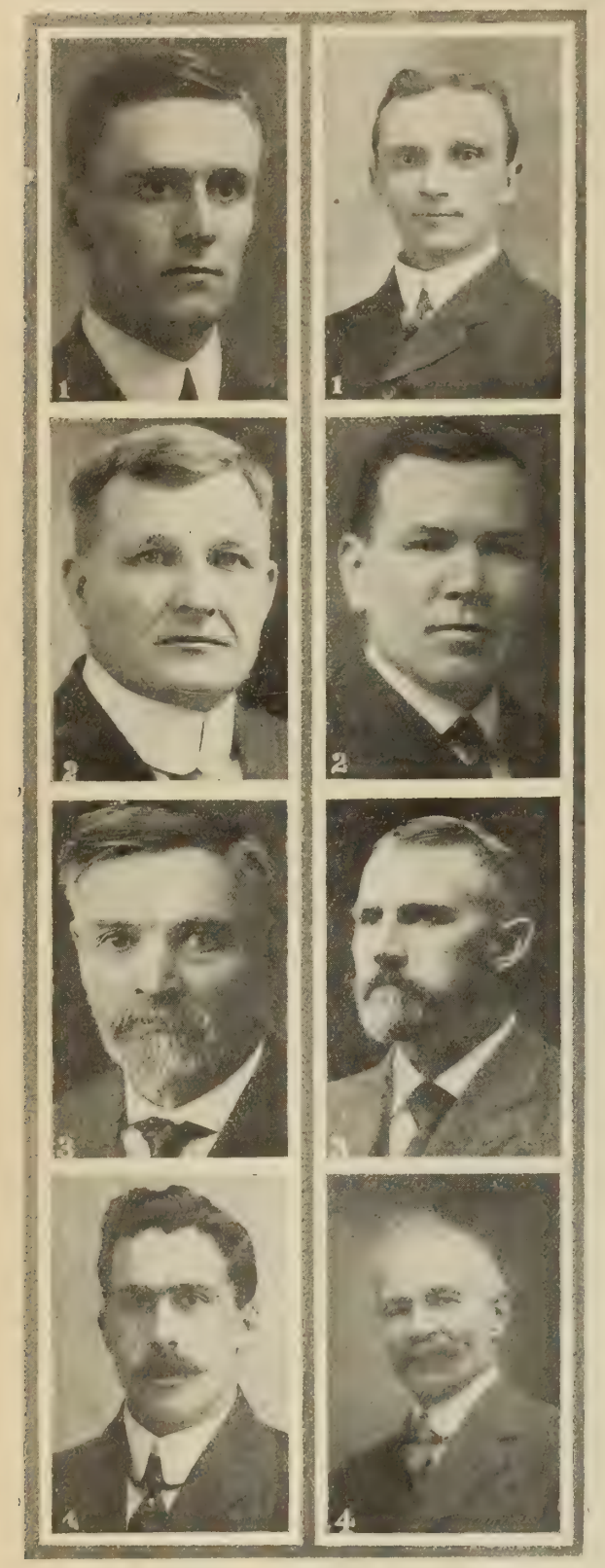
GUARDIANS *of the* AYRSHIRE COW

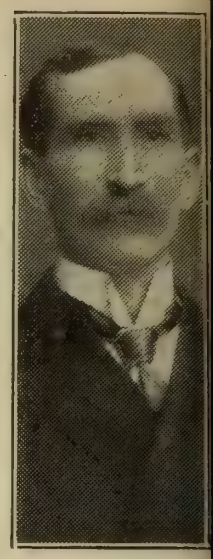
Some Facts About the Executive---*By* W. F. STEPHEN



Left hand side.
1. Wm. Hunter.
2. B. R. Brown.
3. A. H. Trimble.
4. G. McMillan.

Right hand side.
1. R. R. Ness.
2. S. H. Shannon.
3. Jno. McKee.
4. M. St. Marie.

W. F. Stephen, the efficient and genial secretary of the Ayrshire Association, was born near Huntingdon, Que., in 1868. He grew up with Ayrshires and is known over the continent as an Ayrshire judge. He sold out his 85 cattle and 250-acre farm in 1911 to take up the duties of Secretary, since then the membership has grown to 1,600. His wife is Miss Laura Rose, author of the well known work on Farm Dairying. Ayrshire propaganda will never grow cold under his guidance.—EDITOR.



Mr. W. F. Stephen.

MR. FRANK BYRNE started breeding Ayrshires about 15 years ago near Quebec City. His first start was with a few Canadian-bred animals. Then he got the Holstein craze and purchased several cows of that breed. As he was supplying milk to Quebec City, which has a high standard for fat, the milk he was supplying was not up to the standard, so he sold the Holsteins and purchased a number of Ayrshires, quite a few of them being imported. He has now a herd of 44 head on his splendid farm of 160 acres, and keeps adding more of his favorites from time to time. His stable is 40 x 100 feet and is mostly of brick and iron. Mrs. Byrne is a daughter of the late John Dundon of Quebec, who was one of the first and most extensive Ayrshire breeders of Quebec at one time, and is therefore quite as great an Ayrshire enthusiast as her husband. Mr. Byrne is interested in the pulpwood industry and in this connection does considerable travelling. He was elected a director to the Ayrshire Association on February 12th, 1919.

Bertram R. Brown, of York, P. E. I., was born in 1875, and has farmed all his life. Now has 150 acres of the best land on the Island, and well named "Brightside." He bought his first Ayrshires in 1912, animals of good type with high producing qualities. The herd now consists of 23 head of registered stock. He has been doing R. O. P. work and several of his cows have splendid single and cumulative records.

He also breeds Yorkshire swine and Barred Rock Poultry. Mr. Brown takes an active interest in all home affairs. For several years he has been a director of the P. E. I. Egg and Poultry Association, and is vice-president of the Canadian Farm Products, Inc., also is interested in a dairy and cold storage plant on the Island, and was president for several years. He has been road master in his district since 1912. He is a member of the Methodist church, was twice married and has three bright girls to grace his home. Was elected a director of the Ayrshire Association on February 12th, 1919.

A. S. Turner has been breeding Ayrshires for 15 years, quite extensively since purchasing "Springbank" 12 years ago.

Farm consists of 200 acres. Has now about 80 head of Ayrshires. Made their first appearance in the show ring in 1911 meeting with great success and since have rarely failed to put in an appearance each year.

At the Winter Fair Dairy Tests they also captured a good share of the red ribbons. Has had cows entered in the R. O. P. test since it first commenced, and has qualified all together about 75 animals. At present they hold the Canadian mature, 3-year-old and 2-year-old records in the R. O. P. and have held all four at different times.

Gilbert McMillan purchased "Springburn Stock Farm," Huntingdon, Que., from W. F. Stephen, with 40 head of Ayrshires in 1911. He is a great Ayrshire enthusiast. He was born in Scotland and for 6 years after coming to this country was farm manager for Willowmoor Farm, Redmond, Wash., owned by J. W. Clise, and held the same position for one years at "Ryanogue Stock Farm," at Brewster, N. Y., the property of P. Ryan. He is a successful judge of Ayrshires, and has now quite an extensive business in Ayrshires. He has been a successful winner in the ring. His herd now comprises 50 head and his farm consists of 100 acres.

S. H. Shannon, a member of the firm of Shannon Bros., Cloverdale, B.C. This firm commenced breeding Ayrshires in 1909 and have developed one of the largest Ayrshire herds in Western Canada. Several years ago when Mr. Shannon was asked why they selected Ayrshires he answered: "We selected Ayrshires because we wanted a breed of animal that could be depended upon to give a liberal flow of milk, testing high, but not too high, in butter fat. This was because we had been selling bottled milk for invalids and infants for sometime. The milk is bottled on the farm and shipped direct to the retailer. It seemed to us that the Ayrshire would most nearly meet our requirements and we have not regretted our choice." They bred and developed the highest producing Ayrshire cow in Canada, "Grandview Rose," with an R. O. P. record of 21,423 lbs. milk and 890 lbs. butter fat, but owing to her going 10 days over the 15-month limit for freshening she failed to qualify. Their R. O. P. work has been carried on under ordinary farm conditions. The farm consists of 300 acres in the Fraser Valley, 225 acres of which is under cultivation. Mr. Shannon was president in 1917 and 1918 of the British Columbia Dairymen's Association, and is also a member of the Canadian Ayrshire Breeders Association on February 11th., last, to fill the vacancy caused by the resignation of Mr. A. H. Trimble, Red Deer, Alta.

A. H. Trimble, son of the late William Trimble, was born in 1846 in the county of Carleton, Ont. In 1890 he migrated to Western Canada and after prospecting for a suitable location, finally settled near what is now the thriving town of Red Deer, Alta. His choice was a good one, as no section possesses a more fertile soil nor a better water supply.

In 1899, Mr. Trimble bought his first Ayrshires, and they proved such valuable dairy animals that he increased his herd from time to time by making importations from Ontario and Quebec. He supplied a large number of good Ayrshires for foundation stock to dairymen in Alberta and its sister Provinces, and to him must be given credit for being, not only the pioneer Ayrshire breeder in Alberta but the largest distributor of "Our Favorites" in the Western Provinces.

The "Lone Spruce" Ayrshires have made a name for themselves and the breed that is enviable.

Mr. Trimble was elected a director of the Canadian Ayrshire Breeders' Association at the annual meeting held in Toronto in 1912, and has since occupied all the leading executive offices. He sold out his herd last summer.

The dignified Ayrshire cow is a pretty picture on a Quebec farm.

John McKee, "Brookside Stock Farm," Norwich, Ont., was born July 20th, 1864, on the farm in Oxford county where he now resides. The Brookside herd of Ayrshires was established in 1872 by his father, the late Hugh McKee, and now comprises a herd of between 30 and 40 head of purebred Ayrshires. Utility has been the watchword from the beginning, with the result that Brookside Ayrshires are well known for their heavy milking qualities, and have been winners. The famous "Jean Armour," ex-world's champion, record 20,174 lbs. milk and 903 lbs. butter, is a sample of "Brookside" breeding. Mr. McKee has been a director of the Canadian Ayrshire Breeders' Association since 1904, is a past president and is now a member of the executive. He is secretary-treasurer and sales manager for the livest Ayrshire club in Canada, the Southern Counties Ayrshire Breeders' Club. This club has been the medium through which, during the past few years 400 head of Ayrshires have been distributed mainly throughout Western Ontario, by its consignment sales. "Brookside" comprises 125 acres of excellent farm land.

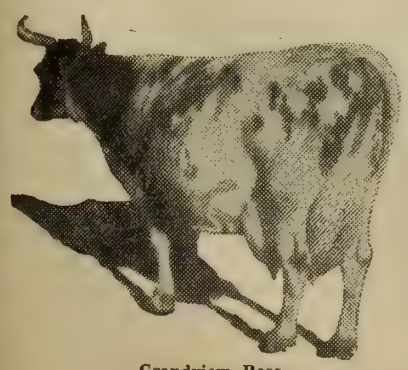
Wm. Hunter, Freeman, Ont., son of the late Robert Hunter, of Maxville, Ont., who had at one time *the most noted herd of Ayrshires* in Ontario. Their auction sale was the first great thing of its kind in Canada. After their sale in 1911, which realized $40,215 for 117 head, he moved to Grimsby to a fruit farm. Last year 1918, he secured a farm near Freeman, Ont., where he is doing a big business in Ayrshires again. A noted judge and who is called on frequently at Canadian and United States shows. He is an extensive importer from Scotland and brought over 49 head last year and is now just back from Scotland where he made another selection.

Frank H. Harris, of "Hillcrest Stock Farm," Mount Elgin, Ont., began with Ayrshires in June 1906, making his first purchase from W. W. Ballantyne of Stratford, and gradually adding to these from the herds of F. W. Taylor, A. Hume & Co., Wm. Stewart and others as conditions would permit, until he had a nice bunch to start breeding from. The bull purchased from Mr. Ballantyne proved to be an extra good one, "Gold Mine"—22003 R. O. P., No. 28, as did his full brother "Hamilton Chief"—17491, R. O. P., No. 4, owned by A. S. Turner & Son. In a surprisingly short time the herd grew from a few head to nearly 100 and for several years he had been keeping from 70 to 100 head, until about a year ago, when one son was married and going on his own farm, he reduced the herd to about 50 head, as well as reducing the farm from 280 acres to 180 acres.

R. R. Ness, of "Burnside Stock Farm," Howick, Que., is the most noted Ayrshire breeder in Canada. He started with little capital and has now the largest Ayrshire herd in Canada, comprising about 200 head. His herd has been successful in winning championships and prizes at all the leading shows in Canada and the United States, including the National Dairy Show. He has imported more Ayrshires from Scotland than any breeder in Canada. Mr. Ness is a director and past president of the Canadian Ayrshire Breeders' Association. His farm consists of 500 acres.

Alex. Hume, of "Humeshaugh," Campbellford, Ont., is one of the oldest and most successful Ayrshire breeders as well as exhibitors in Ontario, and also has qualified a large number of cows in the R. O. P. with good records. As a judge of Ayrshires his services are frequently in demand. Mr. Hume is also a director and past president of the association. His farm consists of 200 acres.

M. St., Marie, who owns a farm of 250 acres at Compton, Que., is most progressive in his farm methods. In 1906 he secured several head of Ayrshires as a nucleus and has built up a herd of sixty or more registered Ayrshires, which are a credit to any farm and to the breed, being large in size, of good type and big producers. A number of the females have qualified in the R. O. P. test and he also owns a number of prize winners.



Grandview Rose.

Good buildings and real homes follow the Ayrshire.

Mr. St. Marie was elected a director of the Ayrshire Association in 1913 and has proved a valuable member of the board. That he has good executive ability has been proved not only in the Ayrshire Association, but in local affairs as well. He has held several important positions in the county, not the least of which is director of the County Agricultural Society. He was born in 1860 and was president of the association in 1916.

Louis Joseph Tarte was born at L'Assomption, Que., December 25th, 1872, son of the late Hon. J. I. Tarte. He is president of the Quebec Railway, a director of the Quebec Railway, Light, Heat and Power Co., ex-member of the financial commission of the St. Jean Baptiste Society and a director of Notre Dame Hospital. Mr. Tarte has been interested in farming since a boy. His first venture in that respect was made at Riviere aux Pins, on a farm belonging to his father, which is located near Valcartier military camp, over thirty years ago. In 1890 he transferred to the old homestead at Lanorie, Berthier county, which has belonged to the family since 1742, and where he established his first herd of Ayrshires. A few years ago he purchased a large tract of farm land at Boucherville, opposite Montreal, where he continued his Ayrshire operations on a larger scale until to-day he has a splendid herd of over 50 head and is preparing to increase to 100. He has been careful in his selection and has secured some of the best Ayrshire blood in Canada. His farm is a model in every respect, and along with the Ayrshires at "Ferme du Lac," Chester White swine and Hampshire sheep are also bred, while a large business is done in poultry.

For the second time in history of the Canadian Ayrshire Breeders' Asociation, Mr. W. W. Ballantyne has been elected to the president's chair. He filled this position in 1909 and in 1917. He was also president of the Ontario Association in 1895.

He was born at Stratford, Ont., in 1861, and is the third of seven sons of a worthy sire, Hon. Thomas Ballantyne, who was one of the progressive and prominent men of Ontario in his day.

At "Neidpath Farm" there was kept a herd of Shorthorns for several years, this was sold and replaced by the best Ayrshires to be had. A number of head were purchased and imported from the Auchenbrain herd of Robert Wallace in Scotland, a female of each of the Beauty, Kirsty, Bessie Denty and Fleckie families by the great sire Craigs of Kyle of Drumjoan. To these were added females of the Rose and Blue Bell families at the dispersion sale of the Morton herd at Hamilton. These strains have been so developed that many of the best Record of Performance cows trace to these families, and thus the "Neidpath" herd has become noted.

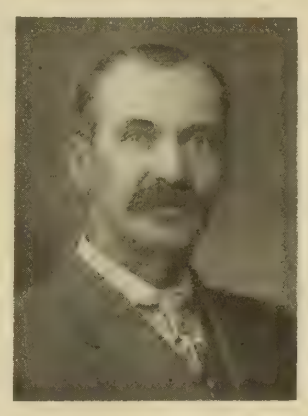
Mr. Ballantyne's good executive ability has qualified him to hold public positions, especially in connection with agriculture. In 1909 the Federal Minister of Agriculture appointed him chairman of the swine commission that went to Europe to study the swine and bacon industry of that continent. He has been a director of the Guelph Winter Fair for over twenty years and president for the past two years. Also a director of the Canadian National Exhibition for eight years and chairman of the Dairy Cattle and Dairy Produce Committee for several years. He has also been president of their local fair board and of the County Farmers' Institute, and for the past three years president of the Southern Counties Ayrshire Breeders' Club.

Mr. L. J. Tarte.

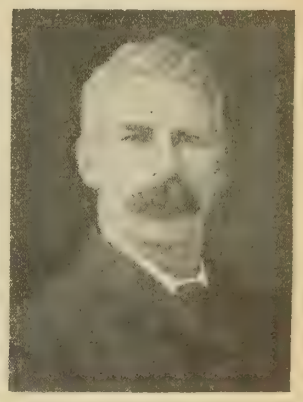
Mr. W. W. Ballantyne.

Mr. Frank Byrne.

Mr. A. S. Turner.



Mr. F. H. Harris.



Mr. Alex. Hume.

Farmerettes like the gentle Ayrshire.

OUR MISUNDERSTOOD NERVES

By DR. WOODS HUTCHINSON

OUR nerves are the most misunderstood things about us—and the toughest. They are a singular mixture of Mother's Darling and Tough Kid. They are *not* misunderstood in the suffer-in-silence, hugging-their-cross, Christian-martyr sense of the term; on the contrary, they scream so loudly before they are hurt, and faint so convincingly whenever "chores" are mentioned that they escape all discipline and dirty work in the body household. And as they are abundantly able to lick anybody else in the body family that makes faces at them, they have the easiest time and "softest job" of all our body tissues.

It is the business of the nerves to be sensitive, to respond instantly to the first whisper or thrill of danger, and their paradox is that the healthier they are the more delicate they are. "Steady" nerves, in the sense of stolid, dull, slow-responding neurons, are the worst and "unhealthiest" kind that anybody can have. Civilized nerves are far more sensitive than savage nerves, but civilized man, by virtue of more sensitive nerves, has grown taller, stronger, more enduring, becomes less subject to disease than the "noblest" savage ever yet discovered, and lives nearly three times as long.

The trouble is that we have allowed our nerves to impose on us. Not content with being of great and real importance, they have insisted on being considered the "whole show" and crowned dictators of the body republic. Just as one given an inch of advantage is prone to make it a yard, so our nervous system has gradually presumed upon its privileges until it has hypnotized us into the belief that the state of our nerves is the most important consideration in the world.

It is only fair to recall that we have ourselves actively assisted in creating this illusion of the supreme importance and delicacy of the nervous system. Ever since we discovered that we had a brain, we have been so enormously proud of that swollen cephalic bulb which houses what we are pleased to term our mind that we eagerly bow down before it and worship it and declare it to be the only thing about our vile body which is really worth considering. Mind maketh man, and the brain is the seat of the mind! Recently, however, we have come to suspect that our mind, whatever we mean by the term, so far from being confined to our brain or even chiefly residing there, pervades every region of our body.

Fortunately we still have the whip-hand of our nerves, and possess means to limit their tyranny and check their delusions of grandeur whenever we will. While in one sense the brain and nerves are the biggest and bossiest things in the body, in another sense they are the weakest and most dependent. They have wonderful executive powers, but they have no control over the finances. Brain may be president of our body republic, but stomach still remains the legislative body which alone can raise money and vote supplies. We can, at will, starve or poison our nerves into wild but impotent revolt, or we can feed and play them into good behavior.

In fact, the secret of success in dealing with the nervous system is to pay little or no attention to it directly, but to feed and rest and exercise all the rest of the body into perfect condition; then the nervous system will "Baa-baa hoppee long too," as the Chinese version of "Mary Had a Little Lamb" hath it. Nothing that is done to the brain or mind, or by the mind, has the slightest permanent effect upon either insanity or nervous breakdown, save in so far as mental impressions influence physical conduct. Food is the master-word in neurology, just as much as it is in cattle-feeding, or egg-production, or factory output. *Take care of your digestion, your play, and your sleep, and your nerves will take care of themselves.* Our nerves are not breaking down under modern civilization; on the contrary, they are thriving and growing fat on it.

But if this be true, how did we get such an absolutely contrary impression? The misapprehension rests mainly upon two facts. In the first place, as we have already seen, we mistake the ringing sentinel challenge of the nerves at the first footfall of danger for a sign of disease or weakness in them. It is often the people most "delicate" in youth who live to the ripest old age, because their nerves always scent danger ahead in time for them to sidestep it.

THE second reason for this wrong impression is that we confuse the recognition of a disease with its prevalence, and imagine that because we have had the wit finally to discover a disease, therefore it has only just been created! It is only within the last two or three hundred years that humanity has become intelligent enough to recognize the large bulk of nervous and other chronic diseases. Whereupon, with logic positively infantile in its feebleness, we dub them "new" and declare that they have only just come into existence, and that if they continue to increase at the rate at which we have discovered them, they will devour us alive and wipe out the race within a few generations! We mistake an increase of our ability to recognize and talk about a disease for an increase in its prevalence.

Take, for instance, the widely trumpeted belief in the increase of insanity. The most thoughtful and competent experts, both medical and statistical, are now almost unanimous in the opinion that the increase of insanity in modern times is *almost entirely upon paper.* That is to say, we are recognizing and officially registering every year more of the ill-balanced minds in the community than we ever did before.

Far from insanity being peculiarly a disease of civilization, a penalty of education and culture, it is precisely the opposite. Every savage tribe that has been carefully studied has shown a higher percentage of insanity than any known civilized nation, and every half civilized race yields more lunatics than any highly civilized one. It is the lowest and most primitive class of society that sends the largest percentage of its numbers into the insane asylums, both public and private, and the highest class that sends the lowest percentage. Our foreign-born immigrants, for instance, contribute nearly double the percentage that our native-born population does.

But when all is said and done, and the very blackest figures are accepted, the most thoroughly registered and highly intellectualized of modern communities shows a total insanity rate of only about *four in the thousand,* less than one-half of one per cent.! And even allowing that there are four mild, or unrecognized, cases outside the asylums for every one in them, this would make only two per cent. of all grades of mental defectives in the entire community. If the grim clutch of circumstance, and the "slings and arrows of outrageous fortune," acting upon our defenseless nervous systems through more than five thousand years of various degrees of civilization, have succeeded in crazing only two per cent. of us, we surely need not have any very grave apprehension for the integrity of our nervous systems in the future!

ROUGHLY speaking, the body is made up of five great systems of about equal magnitude and importance, the digestive, the circulatory, the respiratory, the nervous, and the motor, represented respectively by the stomach and intestines; the heart and the blood-vessels; the lungs; the brain and the nerves; and the muscles and bones. Arranging these five systems according to the number of deaths due to their breakdown or disease, with the weakest and least resisting at the top, the lungs occupy that bad eminence—consumption, pneumonia, and their allies being responsible for nearly a third of all deaths—while the nervous system comes next to the last. That is to say, judging by the frequency with which its diseases and breakdowns cause death, the nervous system is the toughest.

Not only is this general statement true, but when we study the return more closely, we find that many, if not most of the deaths attributed to the nervous system are really due to and dependent upon diseases beginning in some other system. For instance, apoplexy, or "stroke of paralysis," usually classified, and in a sense correctly, under diseases of the nervous system, is really due to decay and rupture of the coats of the blood-vessels supplying the brain, and might fairly be classed as a disease of the circulatory system.

The control which these and similar facts give us over the prevention of nervous diseases is most important and practical. In the first place, in a small percentage of cases, like insanity, feeble-mindedness and certain paralyses of childhood, we have to begin, in Holmes's phrase, "with the grandparents," for heredity plays a heavy part. But in a large majority of cases control of the causes of the disease falls within the lifetime of the individual.

The first and one of the most important ways to prevent and check the spread of nervous diseases is to fight against general infections and fevers. It would hardly be too much to say that two-thirds of our definite and serious diseases of the nervous system are due to its invasion by the germs or poisons of general infections. First and foremost among them comes syphilis, which is the sole cause of the two most serious forms of general paralysis, known as paresis and locomotor ataxia. It also causes between ten and fifteen per cent. of all insanity in men, as paresis ends in insanity. Then come the after-effects upon the brain and nervous system of such diseases as typhoid fever, pneumonia, and tuberculosis, particularly, and in a less degree, scarlet fever, measles, diphtheria, and even the grippe and tonsilitis. A careful study of the number

Continued on page 29

By JAMES WHITCOMB RILEY

One time, when we'z at Aunty's house
  'Way in the country!—where
They's ist but woods—an' pigs, an' cows—
  An' all's out-doors an' air!
An' orchurd-swing; an' churry-trees—
An' *churries* in 'em! Yes, an' these
Here red-head birds steals all they please,
  An' tetch 'em ef you dare!
W'y, wunst, one time, when we was there
  We et out on the porch!

Wite where the cellar-door was shut
  The table was; an' I
Let Aunty set by me an' cut
  My vittuls up—an' pie.
'Tuz awful funny! I could see
The red-heads in the churry-tree;
An' bee-hives, where you got to be
  So keerful, goin' by;
An' "comp'ny" there an' all! an' we—
  We et out on the porch!

An' I ist et p'surves an' things
  'At Ma don't 'low me to—
An' *Chickun-gizzurds*—(don't like wings
  Like Parunts does! do you?)
An' all the time, the wind blowed there,
An' I could feel it in my hair,
An' ist smell clover ever' where!
  An' a' old red-head flew
Purt' nigh wite over my high-chair,
  When we et on the porch!

Help the Y.M.C.A. Finish Its Work for the Soldiers

Help the "Y" Construct the Manhood that will Reconstruct Canada

ALL the world now knows that the Red Triangle of the Y.M.C.A. was the "Sign of Friendship" to thousands of your brothers, sons, nephews, cousins and neighbours' boys in the last four and a half years. Wherever the Canadian Soldiers went, the "Good old 'Y'" went, too. And now it is coming back home with them!

For the support which has made possible the war work of the Y.M.C.A., we thank you. Your money has been well expended. We have rendered full account.

We ask now your continued sympathy and support for Red Triangle Service for our soldiers during Demobilization, and for Y.M.C.A. work for Canada generally during the Reconstruction period. The Annual Red Triangle campaign will be held throughout Canada May 5th to 9th, 1919. The objective is $1,100,000.

For what purpose is the money required? We will tell you.

For Our Men Returning

For the soldiers and their dependents, returning from Overseas, we have provided as follows:

1. A Red Triangle man on board every ship when it leaves Great Britain, with a full equipment of games, gramophones and records, magic lantern, literature and writing materials. Where possible, also a piano or an organ. Lectures, concerts, sing songs, instruction re Government repatriation plans, and Sunday services.

2. Red Triangle comforts and facilities for the men on arrival at Halifax, St. John, Quebec, and Montreal, including coffee stalls with free drinks, free eatables, cigarettes, candies, etc.

3. Red Triangle men on every troop train to provide regularly free drinks, eatables and cigarettes, organize games and sing songs and furnish information.

4. Red Triangle free canteen service, information bureau, etc., at each of the 22 dispersal centres in Canada.

5. Red Triangle Clubs in the principal cities of Canada in the shape of large Y.M.C.A. hostels to furnish bed and board at low rates and to be a rendezvous for soldiers.

6. Seventy-five Secretaries to superintend Red Triangle service in Military Hospitals, Camps and Barracks throughout Canada.

7. Tickets entitling soldiers to full Y.M.C.A. privileges for six months at any local Y.M.C.A. furnished.

In addition to our work for the returning soldiers, we have to maintain the Red Triangle service to the full for the soldiers in Siberia, as well as the work of special Secretaries in Northern Russia, Palestine and Poland.

For Canada's Manhood

The reconstruction program of the Y.M.C.A. includes the following vitally important developments:

1. An increased service to 300,000 teen-age boys in the Dominion—the development of Canadian Standard Efficiency Training; Bible Study Groups; Summer Camps; Conferences; Service for High School Boys; for Working Boys in the towns and cities; for boys on the farm and for boys everywhere, who have lacked opportunity for mental, moral, physical or social development.

2. Inauguration of Y.M.C.A. work in the country, and the smaller towns and villages lacking Association buildings and equipment, on a plan of country organizations. This will include the establishment of Red Triangle centres for social, recreational and educational work among boys and men, in co-operation with the churches.

3. The promotion of Y.M.C.A. work among Canada's army of workers in industrial plants, both in Y.M.C.A. buildings and in the factory buildings, organizing the social spirit among the industrial workers of our cities by meetings, entertainments, games and sports.

4. The establishment of the Red Triangle in isolated districts where lumbermen, miners and other workers hold the front trenches of industry.

5. Besides these main fields of increased activity for 1919, we have to provide for enlarged work among railway men, college students and for our campaign to encourage physical and sex education. Under all our work we place the fundamental foundation of manly Christianity.

Y.W.C.A.

For the wives and children Overseas, dependent upon Canadian soldiers, and for Y.W.C.A. work in Canada generally, a sum of $175,000 from the Red Triangle Fund will be set aside for the Dominion Council of the Y.W.C.A. which is caring for the soldiers' women folk, and their little ones on the long journey from Liverpool to Canada, and is also extending its work for Canadian girls

For their sake also be generous when you make your contribution.

FOR the sake of our victorious soldiers and their dependents, and the happiness of their home-coming; for the sake of our future citizens, our teen-age boys; for the sake of rural life in Canada; for the sake of the social betterment of the toilers in factory and workshop; for the sake of lonely men and boys in our mines and forests; for the sake of Christian Society and Canadian manhood—we appeal to you. Give us your contribution, little or big. Be as generous as you can.

Hand your contribution to the canvasser when he calls, or if you live where it is difficult for him to call, send it by check, money order or registered letter to the National Treasurer, Red Triangle Campaign, 120 Bay Street, Toronto.

Please Note:

We are not asking for money to carry on our work Overseas, with the Army in Great Britain, France or Belgium. That work will continue at its maximum for some months, financially provided for by the liquidation of our assets Overseas, and will not cease till the last man has sailed for home.

National Council, Young Men's Christian Associations of Canada

The Red Triangle Campaign is being conducted under the distinguished patronage of His Excellency, the Duke of Devonshire, K.G., G.C.M.G., G.C.V.O., P.C.

Hon. Campaign Chairman: JOHN W. ROSS, Montreal

Campaign Chairman: G. HERBERT WOOD, Toronto

Campaign Treasurer: THOMAS BRADSHAW, Toronto.

Campaign Director: CHAS. W. BISHOP, Toronto

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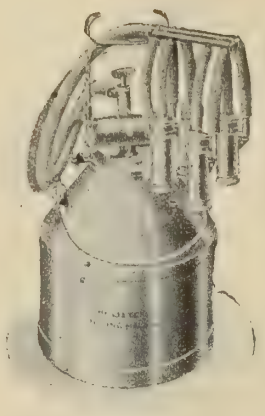

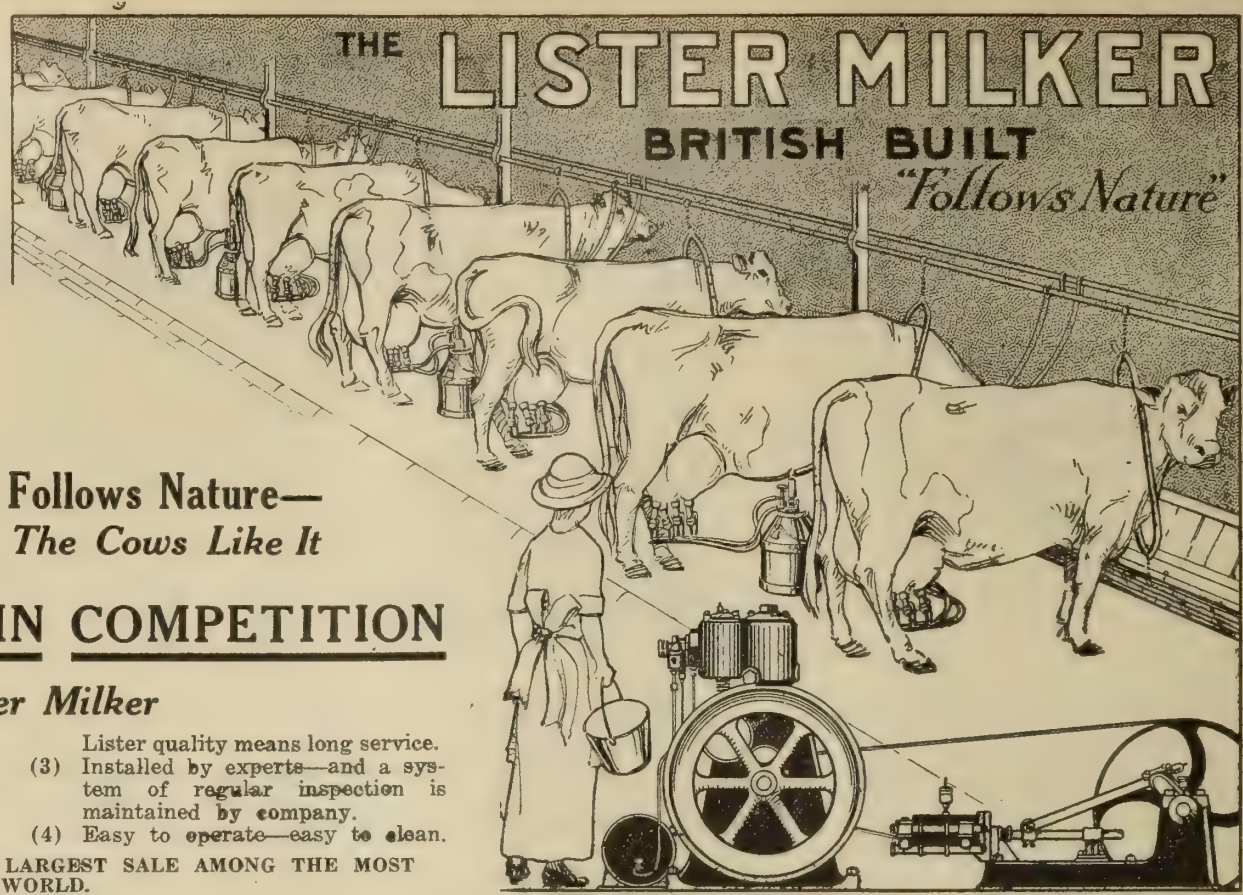

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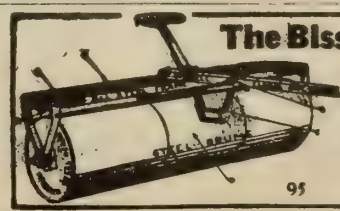

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We have doubled our factory capacity and are determined to supply our customers far and near. See advertisement also on page 20.

B.C.'S LIVESTOCK CAPITOL

By John Pawtuckaway

KAMLOOPS, in the interior dry belt, is coming to be regarded as the British Columbia livestock capital. It is a favored meeting place of the British Columbia Stockbreeders' Association. The headquarters of the British Columbia Wool Growers' Association, the membership of which has grown from 30 in 1917 to 139 at present, are at Kamloops. Grazing and ranching interests find this interior point convenient of access, and it was here the first ram sale was held last October, here the first annual British Columbia bull sale was held in March.

The bull sale was the occasion for several meetings. But first of all, the sale. As an initial venture, it was considered by breeders and Government workers an entire success. Ninety-five animals changed hands for a total of $16,685. The highest price paid was $450, given by British Columbia Fruitlands, Limited, for Bowden Chief, a 2-year-old Shorthorn offered by Hon. Duncan Marshall. The runner-up was Alberta Don A., consigned by Thos, Baird, Red Willow, Alta., for which Charles Doering, the Ashcroft rancher, paid $415. This bull is a two-year-old Hereford. Both registered and unregistered purebred bulls were sold.

At afternoon and evening sessions of the stockbreeders various experts gave addresses. There was a good deal of spirit in proceedings, and a marked determination evinced to enlarge the scope and size of the association. A. D. Paterson, of Delta, was elected president by a close margin over George Heggie of Vernon. Both candidates were first-class men—either would have served well. H. F. Mytton, Kamloops, was made vice-president. The six directors elected for the coast were George Sangster and C. Spratt, Victoria; F. Bishop, Duncan; Prof. McLean, Vancouver; P. H. Moore, Colony Farm; and Alex. Davie, Delta. For the Interior were chosen Charles Hardy, Armstrong; Mike Hereron, Kelowna; F. B. Ward, Douglass Lake; D. W. Strahan, Tranquille; John Redman, Knutsford; and C. E. Wynn Johnson, Alkali Lake.

The co-operative wool growers held a meeting at which business matters were considered and officers elected. This association sold last year through the Dominion organization wool which netted $30,000. D. W. Strahan was elected president.

TURNING COWS IN PASTURE

By W. H. Underwood

IT is not wise to turn the cows in pasture at the first appearance of grass. The first grass may taste good but it is "flashy" and lacks what is known by the common term substance. It may stimulate an increase in the yield of milk but the increase will be at the expense of flesh of the animals and in a great degree the capabilities of the cow producing a heavy flow of milk for a long period of time. The fresh grass which grows first in the spring has a laxative influence on the bowels and if indulged in to a considerable degree exhausts the system and reduces the amount of flesh carried and produces a disordered condition of the stomach and alimentary canal which enfeebles the system for a long time.

It is much better to keep the cows off the pasture until the time when the grass has arrived at the point where it has substance and nourishment. It is also better to allow the cows to become accustomed to the grass diet gradually and not take any chances on the derangements of the system which are likely to follow if they are allowed to gorge themselves with all the fresh green grass they can hold the first day they are allowed to get a taste of it. Serious difficulties may be avoided if this precaution is taken. It is easier to prevent troubles of the kind mentioned than to cure them after they have been contracted.

When the grass has reached the point when it is thought best to turn the cows out they should be fed the morning and noonday feedings of dry feed and then allowed to eat grass for a short time in the afternoon and then taken off the grass and given their usual feeding of dry feed. The second day they may be allowed to eat grass a little longer and then removed from the pasture and fed as before. The period of eating grass can be lengthened each day until the noonday feeding is dispensed with. The morning and evening feeding should however be continued until the dry feeds are refused and the animals are well sustained by the grass consumed.

When the cows are first turned onto pasture it is a good plan to feed laxative grain feeds like wheat bran and oil meal sparingly. The place of the laxative grain feeds can be taken by ground oats and excellent results obtained. For the first ten days or two weeks after the cows are turned out to grass they should be given only about one-half the quantity of salt they are used to receiving.

By following the method here described there need not be any derangement of the system produced nor any appreciable loss of flesh sustained. The flow of milk must from the nature of the feed consumed be increased and the cows tided over the critical time in such a manner as will enable them if an abundance of grass is available to keep up a steady flow of milk for a long period of time.

WHAT ABOUT OUR WHEAT

Continued from page 7

There seems to be a strong undertone in wool. The American Sheep Breeder says that following the 7½ per cent. decrease in Government upset prices, wool buying greatly increased, although prior to the change in Government upset prices, the market was in healthy condition. The change has made possible a readjustment of prices to comply with demand. As a result, some grades are selling higher than previously, while others are lower. The fine wools have advanced at recent auctions, so that fancy Ohio has sold at 76 to 78 cents. Three-eighths blood has followed the decrease in upset price. There are, however, only small stocks of this wool on hand, due to the large military demand, and a revival price on these grades may be expected with the coming of the new clip.

Cattle and Hogs

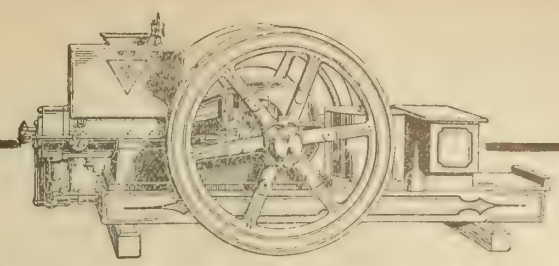
An explanation of the increased cattle and hog prices in Canada may be summed up in the following from the *Breeders Gazette*:

Last week 93,315,000 lbs. of lard and meats went across the Atlantic, against 60,335,000 lbs. a year ago, but the movement would have been doubled had ship space been available. Germany has made provision for payment in gold for its allotment of meats and lard which means that the export movement will continue, provision experts expressing the opinion that cellars on this side will be bare by the middle of June, provided European rail facilities are equal to conveying the goods from seaports to the interior.

There seems to be a growing belief that cattle prices will remain at a high level for some time. The fact that many feeders have put grass cattle out at high prices precludes any hope of a very serious decline for some time.

Hay producers are in a strong position. With a likelihood of cheaper grain prices in the fall and a strong demand for fats they are protected against any serious and rapid decline.

The producer is in a strong position. All he needs is a careful husbanding of his crops, a wise purchasing of feeds, and he will be sure to land on the right side of the ledger. Livestock farming is the surest of all farm operations.



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Made in 12 sizes, 1½ to 28 H. P.

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are designed to remove all elements of chance from hay making. The mower lays the hay in even swaths down meadow and hayfield. The left-hand side delivery rake follows the mower closely, touching the heads first (not the stems), piling two swaths at once on the clean stubble. This insures proper and speedy curing. Every hay grower should become familiar with the combined side delivery rake and tedder, which has become one of the most popular haying tools. It can be instantly adjusted for raking or tedding.

International loaders leave the field clean, lift hay over 10 feet and do not thresh off blossoms and leaves. Sold with or without forecarriage.

You will find that the local agent has just the size and style of International Harvester haying machines your work requires. See him, or write for catalogues. Order early.

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WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

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You may be told that you can buy overalls equal to Carhartt's at a lower price. Believe me, you can't. No one can. The fine quality of Carhartt's and the fair price at which they are sold are due to my enormous output—probably the greatest on the continent—which enables me to do with a slight profit. How then can any manufacturer doing business in a smaller way, with less efficient methods, and with few opportunities of cutting expense hope to give as much value as Carhartt's for less money? Be assured of this: that if it were possible to offer you the present quality of Carhartt's at a lower price, I would be the first to do it.

Hamilton Carhartt
President

Hamilton Carhartt Cotton Mills, Limited
Toronto Montreal Winnipeg Vancouver

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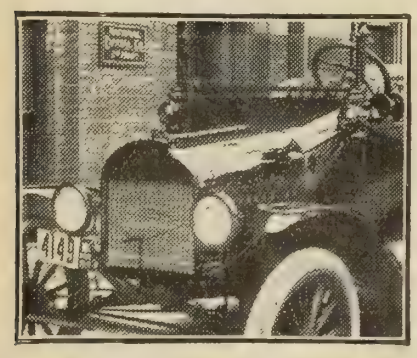

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

Lin Slone, a wild-horse hunter, trails a magnificent, wild, red stallion — which he names Wildfire—for several months—from the Utah ranges across the Grand Canon of the Colorado. At last, when almost starving, he ropes the horse, but is thrown and hurt.

On the south side of the Grand Canon is a settlement called Bostil's Ford. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. He is very jealous of Creech, another rancher, who also owns some splendid horses. The annual races are soon to take place and Bostil fears that his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. It is now May and Creech has sent several urgent messages for the boat; Bostil, however, still delays. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has often sworn revenge. Cordts, a horse-thief, has also threatened to carry her off.

One day Lucy, riding alone in the desert, finds Slone lying helpless and renders him assistance. The next day she brings him food and clothes, but, at his request, says nothing about him at the Ford. Wildfire takes a fancy to Lucy and Slone agrees to let her ride him in the races. Two weeks elapse, during which Lucy comes in secret every day to train Wildfire.

CHAPTER X—*Continued*

LIN SLONE had changed his camp and had chosen a pass high up where the great walls had begun to break into sections. Here there was intimacy with the sheer cliffs of red and yellow. Wide avenues between the walls opened on all points of the compass, and that one to the north appeared to be a gateway down into the valley of monuments. The monuments trooped down into the valley to spread out and grow isolated in the distance. Slone's camp was in a clump of cedars surrounding a spring. There was grass and white sage where rabbits darted in and out.

Lucy did not approach this camp from that round-about trail which she had made upon the first occasion of her visiting Slone. He had found an opening in the wall, and by riding this way into the pass Lucy cut off miles. In fact, the camp was not over fifteen miles from Bostil's Ford. It was so close that Lucy was worried lest some horse-tracker should stumble on the trail and follow her up into the pass.

This morning she espied Slone at his outlook on a high rock that had fallen from the great walls. She always looked to see if he was there, and she always saw him. The days she had not come, which were few, he had spent watching for her there. His tasks were not many, and he said he had nothing to do but wait for her. Lucy had a persistent and remorseful, yet sweet memory of Slone at his lonely lookout. Here was a fine, strong, splendid young man who had nothing to do but watch for her—a waste of precious hours!

She waved her hand from afar, and he waved in reply. Then as she reached the cedared part of the pass Slone was no longer visible. She put Sarchedon to a run up the hard, wind-swept sand, and reached the camp before Slone had climbed down from his perch.

Lucy dismounted reluctantly. What would he say about the riding-habit that she wore? She felt very curious to learn, and shyer than ever before, and altogether different. The skirt made her more of a girl, it seemed.

"Hello, Lin!" she called. There was nothing in her usual greeting to betray the state of her mind.

"Good mornin'—Lucy," he replied, very slowly. He was looking at her, she thought, with different eyes. And he seemed changed, too, though he had long been well, and his tall, lithe rider's form, his lean, strong face, and his dark eyes were admirable in her sight. Only this morning, all because she had worn a girl's riding-skirt instead of boy's chaps, everything seemed different. Perhaps her aunt had been right, after all, and now things were natural.

Slone gazed so long at her that Lucy could not keep silent. She laughed.

"How do you like—me—in this?"

"I like you much better," Slone said, bluntly.

"Auntie made this—and she's been trying to get me to ride in it."

"It changes you, Lucy....But can you ride as well?"

"I'm afraid not....What's Wildfire going to think of me?"

"He'll like you better, too....Lucy, how's the King comin' on?"

"Lin, I'll tell you, if I wasn't as crazy about Wildfire as you are, I'd say he'll have to kill himself to beat the King," replied Lucy, with gravity.

"Sometimes I doubt, too," said Slone. "But I only have to look at Wildfire to get back my nerve....Lucy, that will be the grandest race ever run!"

"Yes," sighed Lucy.

"What's wrong? Don't you want Wildfire to win?"

"Yes and no. But I'm going to beat the King, anyway....Bring on your Wildfire!"

Lucy unsaddled Sarchedon and turned him loose to graze while Slone went out after Wildfire. And presently it appeared that Lucy might have some little time to wait. Wildfire had lately been trusted to hobbles, which fact made it likely that he had strayed.

Lucy gazed about her at the great looming red walls and out through the avenues to the gray desert beyond. This adventure of hers would soon have an end, for the day of the races was not far distant, and after that it was obvious she would not have occasion to meet Slone. To think of never coming to the pass again gave Lucy a pang. Unconsciously she meant that she would never ride up here again, because Slone would not be here. A wind always blew through the pass, and that was why the sand was so clean and hard. To-day it was a pleasant wind, not hot, nor laden with dust, and somehow musical in the cedars. The blue smoke from Slone's fire curled away and floated out of sight. It was lonely, with the haunting presence of the broken walls ever manifest. But the loneliness seemed full of content. She no longer wondered at Slone's desert life. That might be well for a young man, during those years when adventure and daring called him, but she doubted that it would be well for all of a man's life. And only a little of it ought to be known by a woman. She saw how the wildness and loneliness and brooding of such a life would prevent a woman's development. Yet she loved it all and wanted to live near it, so that when the need pressed her she could ride out into the great open stretches and see the dark monuments grow nearer and nearer, till she was under them, in the silent and colored shadows.

Slone returned presently with Wildfire. The stallion shone like a flame in the sunlight. His fear and hatred of Slone showed in the way he obeyed. Slone had mastered him, and must always keep the upper hand of him. It had from the first been a fight between man and beast, and Lucy believed it would always be so.

But Wildfire was a different horse when he saw Lucy. Day by day evidently Slone loved him more and tried harder to win a little of what Wildfire showed at sight of Lucy. Still Slone was proud of Lucy's control over the stallion. He was just as much heart and soul bent on winning the great race as Lucy was. She had ridden Wildfire bareback at first, and then they had broken him to the saddle.

IT was serious business, that training of Wildfire, and Slone had peculiar ideas regarding it. Lucy rode him up and down the pass until he was warm. Then Slone got on Sarchedon. Wildfire always snorted and showed fight at sight of Sage King or Nagger and the stallion Sarchedon infuriated him because Sarchedon showed fight too. Slone started out ahead of Lucy and then they raced down the long pass. The course was hard-packed sand. Fast as Sarchedon was, and matchless as a horseman as was Slone, the race was over almost as soon as it began. Wildfire ran indeed like fire before the wind. He wanted to run, and the other horse made him fierce. Like a burr Lucy stuck low over his neck, a part of the horse, and so light he would not have known he was carrying her but for the repeated calls in his ears. Lucy never spurred him. She absolutely refused to use spurs on him. This day she ran away from Slone, and, turning at the end of the two-mile course they had marked out, she loped Wildfire back. Slone turned with her, and they were soon in camp.

Lucy did not jump off. She was in a transport. Every race kindled a mounting fire in her. She was scarlet of face, out of breath, her hair flying. And she lay on Wildfire's neck and hugged him and caressed him and talked to him in low tones of love.

Slone dismounted and got Sarchedon out of the way, then crossed to where Lucy still fondled Wildfire. He paused a moment to look at her, but when she saw him he started again, and came close up to her as she sat the saddle.

"You went past me like a bullet," he said.

"Oh, can't he run!" murmured Lucy.

"Could he beat the King to-day?"

Slone had asked that question every day, more than once.

"Yes, he could—to-day. I know it," replied Lucy. "Oh—I get so—so excited. I—I make a fool of myself—over him. But to ride him—going like that—Lin! it's just glorious!"

"You sure can ride him," replied Slone. "I can't see a fault anywhere—in him—or in your handling him. He never breaks. He goes hard, but he saves something. He gets mad—fierce—all the time, yet he *wants* to go your way. Lucy, I never saw the like of it. Somehow you an' Wildfire make a combination. You can't be beat."

"Do I ride him—well?" she asked, softly.

"*I* could never ride him so well."

"Oh, Lin—you just want to please me. Why, Van couldn't ride with you."

"I don't care, Lucy," replied Slone, stoutly. "You rode this horse perfect. I've found fault with you on the King, on your mustangs, an' on this black horse Sarch. But on Wildfire! You grow there."

"What will Dad say, and Farlane, and Holley, and Van? Oh, I'll crow over Van," said Lucy. "I'm crazy to ride Wildfire out before all the Indians and ranchers and riders, before the races, just to show him off, to make them stare."

"No, Lucy. The best plan is to surprise them all. Enter your horse for the race, but don't show up till all the riders are at the start."

"Yes, that'll be best. . . . And, Lin, only five days more—five days!"

Her words made Slone thoughtful, and Lucy, seeing that, straightway grew thoughtful, too.

"Sure—only five days more," repeated Slone, slowly.

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His tone convinced Lucy that he meant to speak again as he had spoken once before, precipitating the only quarrel they had ever had.

"Does *any one* at Bostil's Ford know you meet me out here?" he asked, suddenly.

"Only Auntie. I told her the other day. She had been watching me. She thought things. So I told her."

"What did she say?" went on Slone, curiously.

"She was mad," replied Lucy. "She scolded me. She said. . But, anyway, I coaxed her not to tell on me."

"I want to know what she said," spoke up the rider, deliberately.

Lucy blushed, and it was a consciousness of confusion as well as Slone's tone that made her half-angry.

"She said when I was found out there'd be a—a great fuss at the Ford. There would be talk. Auntie said I'm now a grown-up girl. . . Oh, she carried on! . . . Bostil would likely shoot you. And if he didn't some of the riders would. . . Oh, Lin, it was perfectly ridiculous the way Auntie talked."

"I reckon not," replied Slone. "I'm afraid I've done wrong to let you come out here. . . But I never thought. I'm not used to girls. I'll—I'll deserve what I get for lettin' you come."

"It's my own business," declared Lucy, spiritedly. "And I guess they'd better let you alone."

Slone shook his head mournfully. He was getting one of those gloomy spells that Lucy hated. Nevertheless, she felt a stir of her pulses.

"Lucy, there won't be any doubt about my stand—when I meet Bostil," said Slone. Some thought had animated him.

"What do you mean?" Lucy trembled a little.

There was a sternness about Slone, a dignity that seemed new. "I'll ask him to—to let you marry me."

Lucy stared aghast. Slone appeared in dead earnest.

"Nonsense!" she exclaimed, shortly.

"I reckon the possibility is—that," replied Slone, bitterly, "but my motive isn't."

"It *is*. Why, you've known me only a few days. . . . Dad would be mad. Like as not he'd knock you down. . . . I tell you, Lin, my dad is—is pretty rough. And just at this time of the races. . . . And if Wildfire beats the King! . . . . Whew!"

"*When* Wildfire beats the King, not *if*," corrected Slone.

"Dad will be dangerous," warned Lucy. "Please don't—don't ask him that. Then everybody would know I—I—you—you—"

"That's it. I want everybody at your home to know."

"But it's a little place," flashed Lucy. "Every one knows me. I'm the only girl. There have been—other fellows who . . . And oh! I don't want you made fun of!"

"Why?" he asked.

Lucy turned away her head without answering. Something deep within her was softening her anger. She must fight to keep angry; and that was easy enough, she thought, if she could only keep in mind Slone's opposition to her. Strangely, she discovered that it had been sweet to find him always governed by her desire or will.

"Maybe you misunderstand," he began, presently. And his voice was not steady. "I don't forget I'm only—a beggarly rider. I couldn't have gone into the Ford at all—I was such a ragamuffin—"

"Don't talk like that!" interrupted Lucy, impatiently.

"Listen," he replied. "My askin' Bostil for you doesn't mean I've any hope. . . . It's just I want him an' everybody to know that I asked."

"But Dad—everybody will think that *you* think there's reason—why—I—why, you *ought* to ask," burst out Lucy, with scarlet face.

"Sure, that's it," he replied.

"But there's no reason. None! Not a reason under the sun," retorted Lucy, hotly. "I found you out here. I did you a—a little service. We planned to race Wildfire. And I came out to ride him. . . . That's all."

Slone's dark, steady gaze disconcerted

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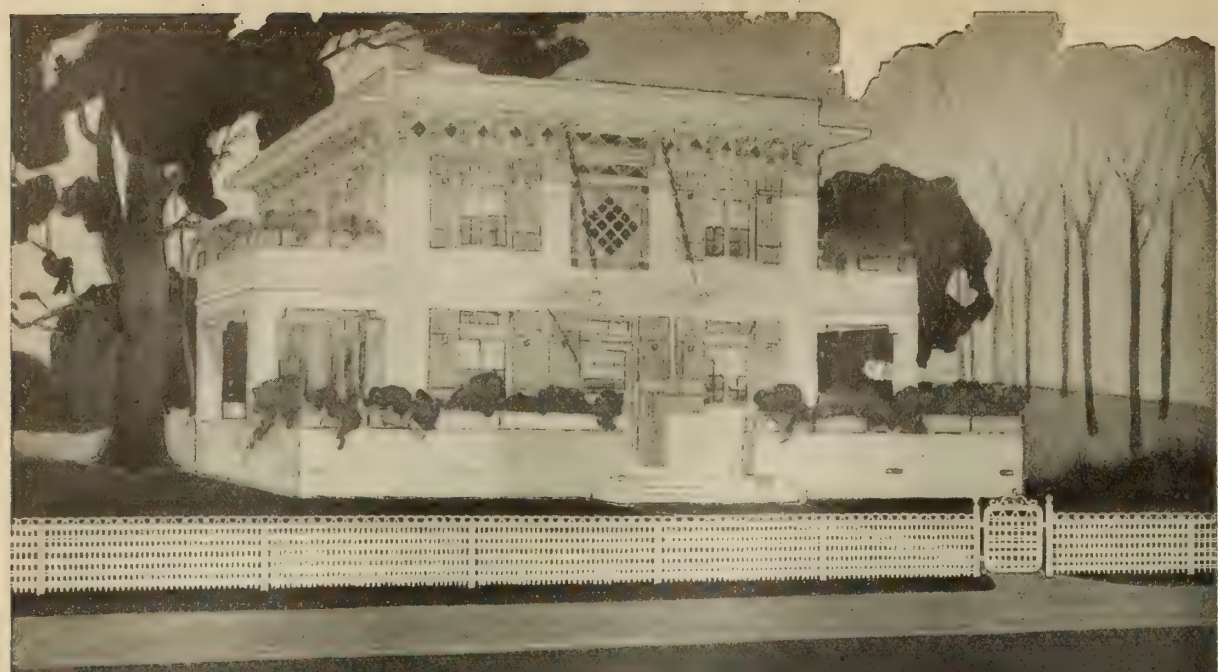

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Lucy. "But, no one knows me, and we've been alone in secret."

"It's not altogether—that. I—I told Auntie," faltered Lucy.

"Yes, just lately."

"Lin Slone, I'll never forgive you if you ask Dad that," declared Lucy, with startling force.

"I reckon that's not so important."

"Oh!—so you don't care," Lucy felt herself indeed in a mood not comprehensible to her. Her blood raced. She wanted to be furious with Slone, but somehow she could not wholly be so. There was something about him that made her feel small and thoughtless and selfish. Slone had hurt her pride. But the thing that she feared and resented and could not understand was the strange gladness Slone's declaration roused in her. She tried to control her temper so she could think. Two emotions contended within her—one of intense annoyance at the thought of embarrassment surely to follow Slone's action, and the other a vague, disturbing element, all sweet and furious and inexplicable. She must try to dissuade him from approaching her father.

"Please don't go to Dad." She put a hand on Slone's arm as he stood close up to Wildfire.

"I reckon I will," he said.

"Lin!" In that word there was the subtle, nameless charm of an intimacy she had never granted him until that moment. He seemed drawn as if by invisible wires. He put a shaking hand on hers and crushed her gauntleted fingers. And Lucy, in the current now of her woman's need to be placated, if not obeyed, pressed her small hand to his. How strange to what lengths a little submission to her feeling had carried her! Every spoken word, every movement, seemed to exact more from her. She did not know herself.

"Lin! . . . Promise not to—speak to Dad!"

"No." His voice rang.

"Don't give me away—don't tell my Dad!"

"What?" he queried, incredulously.

Lucy did not understand what. But his amazed voice, his wide-open eyes of bewilderment, seemed to aid her into piercing the maze of her own mind. A hundred thoughts whirled together, and all around them was wrapped the warm, strong feeling of his hand on hers. What did she mean that he would tell her father? There seemed to be a deep, hidden self in her. Up out of these depths came a whisper; like a ray of light, and it said to her that there was more hope for Lin Slone than he had ever had in one of his wildest dreams.

"Lin, if you tell Dad—then he'll know—and there *won't* be any hope for you!" cried Lucy, honestly.

If Slone caught the significance of her words he did not believe it.

"I'm goin' to Bostil after the race an' ask him. That's settled," declared Slone, stubbornly.

At this Lucy utterly lost her temper. "Oh! you—you fool!" she cried.

Slone drew back suddenly as if struck, and a spark of dark blood leaped to his lean face. "No! It seems to me the right way."

"Right or wrong there's no sense in it—because—because— Oh! can't you see?"

"I see more than I used to," he replied. "I was a fool over a horse. An' now I'm a fool over a girl. . . . I wish you'd never found me that day!"

Lucy whirled in the saddle and made Wildfire jump. She quieted him, and, leaping off, threw the bridle to Slone. "I won't ride your horse in the race!" she declared, with sudden passion. She felt herself shaking all over.

"Lucy Bostil, I wish I was as sure of Heaven as I am you'll be up on Wildfire in that race," he said.

"I won't ride your horse."

"*My* horse. Oh, I see. . . But you'll ride Wildfire."

"I won't."

Slone suddenly turned white, and his eyes flashed dark fire. "You won't be able to help ridin' him any more than I could help it."

"A lot you know about me, Lin Slone!" returned Lucy, with scorn. "I can be as—as bull-headed as you, any day."

Slone evidently controlled his temper, though his face remained white. He even smiled at her.

"You are Bostil's daughter," he said. "Yes."

"You are blood an' bone, heart an' soul a rider, if any girl ever wes. You're a wonder with a horse—as good as any man I ever saw. You love Wildfire. An' look—how strange! That wild stallion—that killer of horses, why he follows you, he whistles for you, he runs like lightnin' for you; he *loves* you."

Slone had attacked Lucy in her one weak point. She felt a force rending her. She dared not look at Wildfire. Yes—all that was true Slone had said. How desperately hard to think of forfeiting the great race she knew she could win!

"Never! I'll never ride your Wildfire *again!*" she said, very low.

"*Mine!*. . . So that's the trouble. Well, Wildfire won't be mine when you ride the race."

"What do you mean?" demanded Lucy. "You'll sell him to Bostil. . . . . Bah! you couldn't!"

"Sell Wildfire!—after what it cost me to catch an' break him?. . . Not for all your father's land an' horses an' money!"

Slone's voice rolled out with deep, ringing scorn. And Lucy, her temper quelled, began to feel the rider's strength, his mastery of the situation, and something vague, yet splendid about him that hurt her.

Slone strode toward her. Lucy backed against the cedar-tree and could go no farther. How white he was now! Lucy's heart gave a great, fearful leap, for she imagined Slone intended to take her in his arms. But he did not.

"When you ride—Wildfire in that—race he'll be—*yours!*" said Slone, huskily.

"How can that be?" questioned Lucy, in astonishment.

"I give him to you."

"You—give—Wildfire—to me?" gasped Lucy.

"Yes. Right now."

The rider's white face and dark eyes showed the strain of great and passionate sacrifice.

"Lin Slone! . . . I can't—understand you."

"You've got to ride Wildfire in that race. You've got to beat the King. . . So I give Wildfire to you. An' now you can't help but ride him."

"Why—why do you give him—to me?" faltered Lucy. All her pride and temper had vanished, and she seemed lost in blankness.

"Because you love Wildfire. An' Wildfire loves you. . . . If that isn't reason enough—then . . . because I love him—as no rider ever loved a horse. . . An' I love you as no man ever loved a girl!"

Slone had never before spoken words of love to Lucy. She dropped her head. She knew of his infatuation. But he had always been shy except once when he d been bold, and that [illegible] quarrel. With a strange pain at her breast Lucy wondered why Slone had not spoken that way before? It made as great a change in her as if she had been born again. It released something. A bolt shot back in her heart. She knew she was quivering like a leaf, with no power to control her muscles. She knew if she locked up then Slone might see the depths of her soul. Even with her hands shutting out the light she thought the desert around had changed and become all mellow gold and blue and white, radiant as the moonlight of dreams—and that the monuments soared above them grandly, and were beautiful and noble, like the revelations of love and joy to her. And suddenly she found herself sitting at the foot of the cedar, weeping, with tear-wet hands over her face.

"There's notnin' to—to cry about," Slone was saying. "But I'm sorry if I hurt you."

"Will—you—please—fetch Sarch?" asked Lucy, tremulously.

While Slone went for the horse and saddled him Lucy composed herself outwardly. And she had two very strong desires. One to tell Slone something, and the other to run. She decided she would do both together.

Slone brought Sarchedon. Lucy put on her gauntlets, and, mounting the horse, she took a moment to arrange her skirts before she looked down at Slone. He was now pale, rather than white, and instead of fire in his eyes there was sadness. Lucy felt the swelling and pounding of her heart—and a long, delicious shuddering thrill that ran over her.

"Lin, I won't take Wildfire," she said.

"Yes, you will. You can't refuse. Remember he's grown to look to you. It wouldn't be right by the horse."

"But he's all you have in the world," she protested. Yet she knew any protestations would be in vain.

"No. I have good old faithful Nagger."

"Would you go try to hunt another wild stallion—like Wildfire?" asked Lucy, curiously. She was playing with the wonderful sweet consciousness of her power to render happiness when she chose.

"No more horse-huntin' for me," declared Slone. "An' as for findin' one like Wildfire—that'd never be."

"Suppose I won't accept him?"

"How could you refuse? Not for me, but for Wildfire's sake! . . . But if you could be mean an' refuse, why, Wildfire can go back to the desert."

"No!" exclaimed Lucy.

"I reckon so."

Lucy paused a moment. How dry her tongue seemed! And her breathing was labored. An unreal shimmering gleam shone on all about her. Even the red stallion appeared enveloped in a glow. And the looming monuments looked down upon her, paternal, old, and wise, bright with the color of happiness.

"Wildfire ought to have several more days' training—then a day of rest—and then the race," said Lucy, turning again to look at Slone.

A smile was beginning to change the hardness of his face. "Yes, Lucy," he said.

"And I'll *have* to ride him?"

"You sure will—if he's ever to beat the King."

Lucy's eyes flashed blue. She saw the crowd—the curious, friendly Indians—the eager riders—the spirited horses—the face of her father—and last the race itself, such a race as had never been run, so swift, so fierce, so wonderful.

"Then Lin," began Lucy, with a slowly heaving breast, "if I accept Wildfire will you keep him for me—until . . . and if I accept him, and tell you why, will you promise to say—"

"Don't ask me again!" interrupted Slone, hastily. "I *will* speak to Bostil."

"Wait, will you . . . promise not to say a word—a single word *to me*—till after the race?"

"A word—to you! What about?" he queried, wonderingly. Something in his eyes made Lucy think of the dawn.

"About—the— Because— Why, I'm—I'll accept your horse."

"Yes," he replied, swiftly.

Lucy settled herself in the saddle and, shortening the bride, she got ready to spur Sarchedon into a bolt.

"Lin, I'll accept Wildfire because I love you."

Sarchedon leaped forward. Lucy did not see Slone's face nor hear him speak. Then she was tearing through the sage, out past the whistling Wildfire, with the wind sweet in her face. She did not look back.

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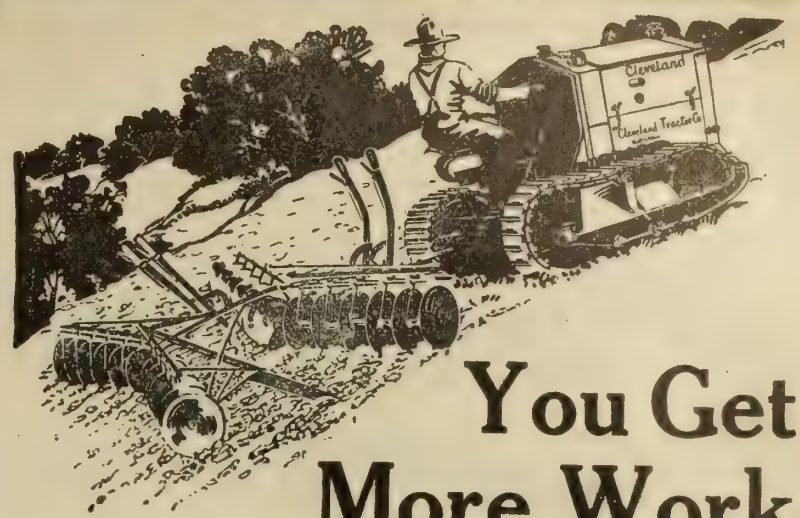

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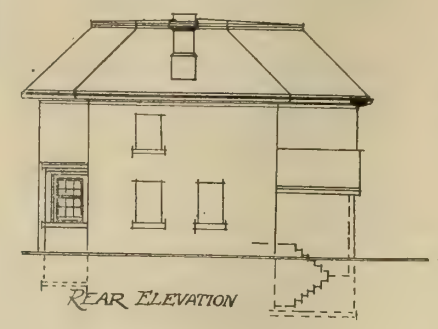
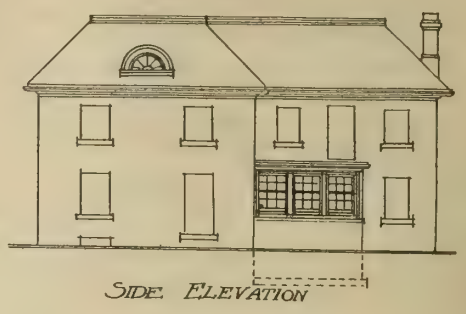
BUILDINGS

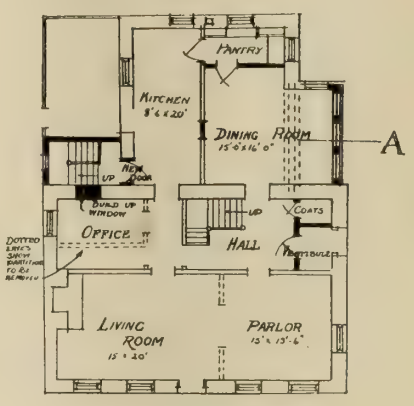
The Remodelled Residence at Kemptville Agricultural School



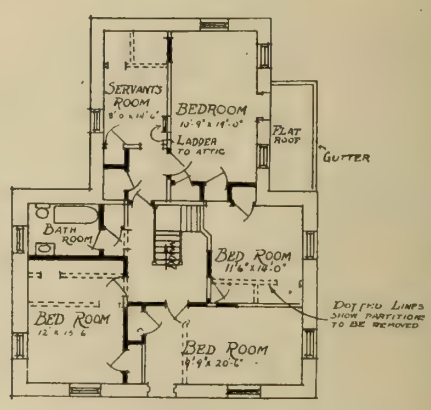


THE Principal's residence at the Kemptville Agricultural School is a fine example of an old house remodelled to have all the desirable characteristics of a modern home, at the same time retaining in many details the charm of the old-fashioned in architecture. The making-over was planned by the Principal, W. J. Bell, and his wife—in fact the new house is pretty largely the result of Mrs. Bell's imagination and practical understanding of what goes to make a convenient, cheerful, livable home. The living-room is the delight of nearly every visitor. It is nearly thirty-six feet long, running the full width of the house. allows room at the back for an office. Across the hall from the living-room is the dining-room. The dotted lines show how an extension has been built on here and glassed in like a big bay window. This makes the dining-room almost as bright as a sun-room. The kitchen, pantry and dining-room are placed in a convenient relation to one another. Water is piped into the house—to a sink in the pantry, a basin in the office and a bathroom upstairs.

A glance at the plan of the upstairs shows how old partitions have been removed and new ones built in to get five good-sized bedrooms with clothes closets and a bath-room. It will be noticed that



Ground Floor Plan.



First Floor Plan.

The dotted lines in the plan show where an archway has been removed to get this long, unbroken room. The windows have not been changed and the thickness of the original wall gives the deep sills featured in all the old colonial pictures. The fireplace is built of rough brick, big enough to take a fair-sized log, and with a broad, red, clay hearth curbed at the edges to keep the ashes from the hardwood floors. The side door, which is the main entrance since the drive runs along the side of the house, opens into a vestibule and hall. The stairs have been turned at a landing halfway up, which all these rooms are well lighted by windows, usually on two sides, and that the flat roof from the large back bedroom could easily be converted into a sleeping porch. The small bedroom with door opening to the large back room is the children's room.

But the charm of this remodelled house does not all come from what the builders could do. With Mrs. Bell's practical, artistic way of decorating and furnishing, the residence would make an ideal demonstration home for the girls who come to take the household science course at the school.

The first building erected by a settler in South Alberta.

BUILDING NOTES

Have you secured your roofing catalogues?

Labor is the greatest factor in all building estimates now.

A very pretty ready roof is now made in red and grey shingle imitation.

Cement must be kept in a dry place off the ground. Get your supply in now.

Get an architect's plan made with all your building schemes on a blue print for your inspection.

A temporary fence is a good thing to have on hand when you want to pasture young hogs or sheep.

House floors should all be made of hardwood. They make house work easier and are more sanitary.

The metal companies now make a metal stable door as well as metal windows and casings. Ask about them.

A work bench with a cupboard for all tools should be arranged in the tool house or machine shed of every farm.

It does not pay to use much old lumber in your rebuilding schemes unless you get it for nothing. The labor of reworking is too great.

Do not be dogmatic in your building schemes. Allow every member of the family to have a say in the discussion. If your arguments are poor, admit the corn.

In building your new house have all the plans you can get about you, for new ideas as to laundry chutes, fireplaces, arches, closets, heating arrangements, built-in cupboards, casement windows, sleeping porches, etc.

Most farmers will find time to do their own cement work in June. Cement walks from the house to the barn, cement gate posts, cement well curbs and covers, cement linings to cisterns and cement drainage outlets are easy to do.

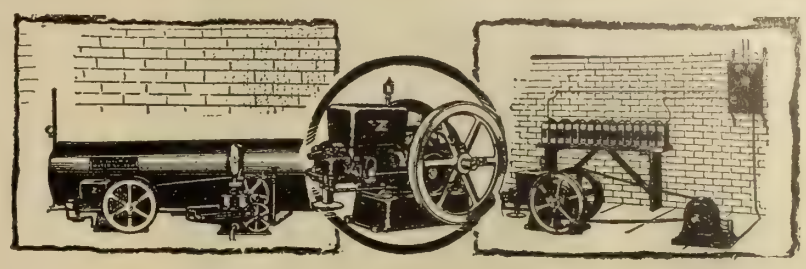
PAINT YOUR SCREENS

THE time is fast approaching when the fly swatter will have to be rescued from its winter hibernation; also the fly screens will have to be fitted up for their summer service. What would we ever do without the swatter and the screen?

But it wouldn't be so necessary to "swat the fly," bat the mosquito and chase the festive bug if the fly screens were protected from rust by an application every spring of good screen paint; neither would it be necessary to buy new screens so often. It is merely another case of a stitch in time saving nine; only in this case it is a few cents' worth of paint saving several more cents' worth of new screen and the bother of putting it on the frames.

But a real screen paint should be used. An ordinary house paint merely stops up the holes and generally gums up the screen. We might as well have our screens look decent; we might as well be able to see through them while protecting them; a special screen paint is the answer. It costs no more than the wrong kind.

Greenhouse Building ought to revive now that the war is over, for undoubtedly there are many opportunities for private fortunes in successful handling of flowers and early vegetables.



Complete The Farm Home With This Equipment

Running water and electric light are all that are necessary to make the modern farm home as comfortable and convenient as the city house. Insure this comfort in your home by installing a

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Pneumatic Water System and Type "F" Electric Light System

This combination brings the farm up to date and guarantees comfort, economy and efficiency. The same engine runs them both. It means light anywhere you want it—running water in any part of the buildings. It means the drudgery removed from the ordinary chores and the house work.

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Heavy coats of hair reek with perspiration and filth. Horses are more liable to colds and the usual spring ailments. A good horse clipping machine costs little and lasts a lifetime. The Stewart No. 1 is the ideal modern machine. Get one from your dealer; if he can't supply you send us his name. Write for 1919 catalog containing complete line of machines.

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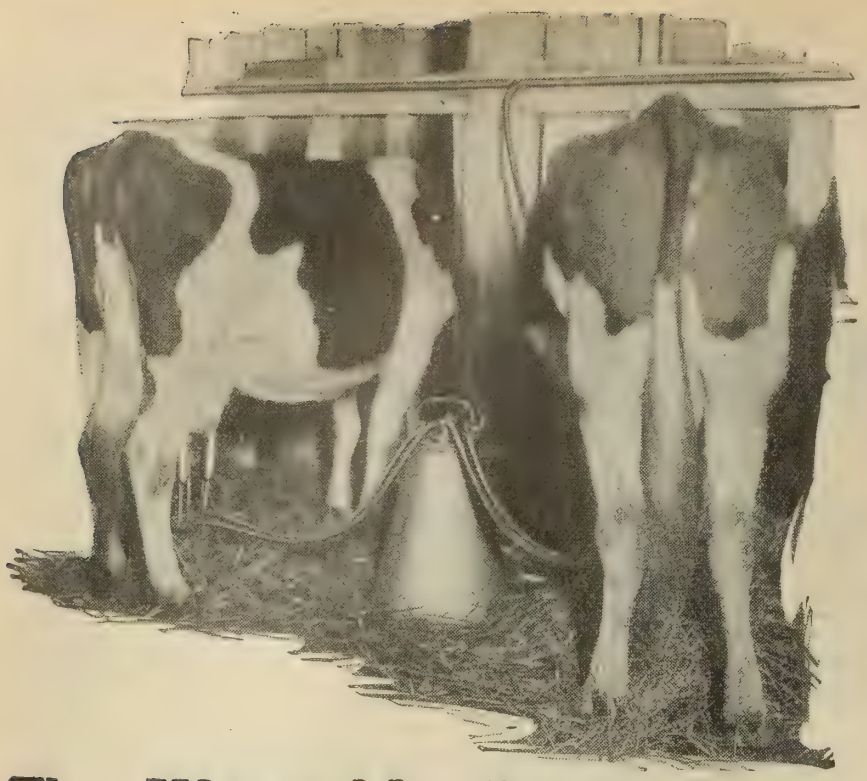

That Waster May Be a Producer

PERHAPS that cow you've been intending to sell may not be a "Waster" after all. Perhaps her low milk records are due to tender teats and extra-sensitive nerves, set on edge by erratic hand milking. Many good milk producers are too nervous and high-strung to yield the maximum milk flow when milked by hand.

But do not condemn them to the block before you *know* they're worthless milkers.

Thousands of such cows have responded to the *gentle, soothing, regular* action of EMPIRE Milking Machines. EMPIRES have saved many a dairyman hundreds of dollars that would have been thrown away if he had sent his so-called "Wasters" to the block.

Mr. L. E. Reynolds of Greenwich, N. Y., wrote us the following unsolicited letter about the results of EMPIRE Milking Machines in his dairy:

"The Empire Milker I purchased from you in June, 1917, is working in a most satisfactory way. For some years back I have been troubled with a few hard milking cows, and have disposed of several on this account that were exceptional good cows for milk production. My milker milks the hard ones just the same as the easy ones. I consider it the greatest labor-saving piece of machinery I have on my farm."

Put EMPIRE Milking Machines to work in *your* dairy. They will not only increase the production of the nervous cows that now "hold-up" their milk; but they'll also cut dairy costs and increase milk profits. They'll make you independent of hired help. They'll relieve you of the drudgery of hand milking.

Get these EMPIRE benefits now. Write at once for catalog 16 and complete information. We'll send it without obligation on your part.

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It will last for generations and retain the same high class appearance

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Abolish the Truss Forever
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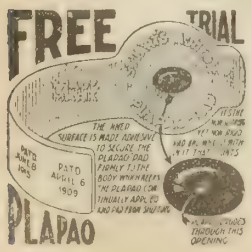
You know by your own experience the truss is a mere makeshift—a false prop against a collapsing wall—and that it is undermining your health. Why, then, continue to wear it?



Stuart's PLAPAO-PADS are different from the truss, being medicine applicators made self-adhesive purposely to prevent slipping and to hold the distended muscles securely in place. No straps, buckles or springs attached; no "digging in" or grinding pressure. **Soft as Velvet—Flexible—Easy to Apply—Inexpensive.** Continuous day and night treatment at home. No delay from work. Hundreds of people have gone before an officer qualified to acknowledge oaths, and **swore** that the **Plapao-Pads** cured their **rupture**—some of them most aggravated cases of long standing. It is reasonable that they should do the same for you. Give them a chance.

FREE TO THE RUPTURED

Trial Plapao and illustrated book on rupture. Learn how to close the hernial opening as nature intended, so the rupture **can't** come down. No charge for it, now or ever; nothing to be returned. Write today—**NOW.** Address, **Plapao Co. Block 629 St. Louis, Mo.**

DAIRYING

Short Term Tests for Cows

By Prof. H. H. DEAN

MANY dairymen are discussing (and cussing) the short-time test of dairy cows. On the one hand are those who say that the whole system of short tests is a fraud on the public. On the other hand, we have a large number of practical breeders who believe that the short-time-test is all right and back up their faith by their works. Sometimes it is difficult to choose between the arguments of two opposing parties. Perhaps the best place to settle a matter of this kind is in the auction sale ring. "Money talks" is an old saying. Men do not part with their money, as a rule, unless they expect to receive an equivalent, or are forced to part with it by means of guile or pressure. I heard a story recently which illustrates the latter point. It is related of a close-fisted Scotchman that when his wife had been buried and all the mourners had left the scene, he turned to the grave-digger and said, "Hoo mutch?" "Five shillin's," was the response. "Here's four shillin's, which is enough for the job." The grave-digger, who also was Scotch, held the four shillings in his left hand, the spade in his right, and said "Another shillin', or up she comes!"

When we attend the auction sales we find that the large number of dollars are paid for the animals with large—seven, fourteen or thirty day—records; or for males from cows with big records. The agricultural and dairy press columns carry a large number of advertisements of "Wanted 30 lbs. Bull"; or "For Sale, a 32 lbs. Bull, Cow, or Heifer." Everybody who knows dairy stock, knows what these "ads." mean, and governs himself accordingly.

Perhaps the most striking example of the added value of stock as a result of short-time testing, is that of the record price paid last year ($106,000) for a six months' bull calf from the cow May Echo Sylvia. This cow has not been tested for longer than 100 consecutive days, during which time she produced nearly 13,000 pounds milk and over 400 pounds "butter-fat," which on the 80 per cent. basis for calculating butter, is equal to over 500 pounds butter. When we consider that it takes a "pretty good cow" to produce half this quantity of milk, and half this weight of butter in *one year*, we realize what this record means. The average cow produces about 3,500 pounds milk and 125 pounds butter in a year, hence May Echo Sylvia's record in 100 days is very nearly equal to that of four average cows for a year.

The American firm who purchased this high-priced calf on the strength of a short-time test, have recently bought another son of the same cow at a "long price," so we understand. As this company is one of the largest and most successful milk-condensing concerns in the United States, who are also owners of large dairy farms and of the most expensive breeding herds of pure-bred cattle to be found anywhere in the world, it is not to be supposed that these men would purchase animals at high prices on the strength of short-time records, unless they had faith in these animals to "deliver the goods."

The owner of May Echo Sylvia told the writer, that he would not run the risk of injuring the breeding qualities of this valuable cow by having her make a year-record. He said her stock was so valuable, that no matter what record she might make for 365 days, if there was the slightest danger of reducing her powers as a breeding animal, he could not afford to take the risk, consequently this probably most valuable cow in Canada has never been subjected to a long-time test. Her owner is confident that she can make a world's record for a year, but it would not pay him. This is one of the most outstanding examples of a well-known breeder who, so far as I know, does not have any of his cows in the yearly test, and he has what is probably one of the most valuable herds of dairy cows in this country. In saying this we are not throwing any mud at yearly tests. We believe in yearly tests as well as those for shorter periods.

Advantages of Short Time Tests

Many breeders of dairy cattle are able to conduct seven, fourteen, thirty or sixty day tests, particularly in winter, who could not undertake yearly tests at all, owing to the scarcity of labor. The seven-day test gets men started on the testing line. Afterwards some of these take up long-time tests. Usually, making the start is the hardest part of the whole question. The average progressive breeder will argue. "I guess we can stand it for one week, anyway." Very often a man who has no intention of continuing a test for longer than a week, keeps on for two weeks or a month. It is so interesting to watch the variations in milk-flow, but more particularly variation in the tests, that he forgets all about the discomforts of getting up at 4.30 a.m. in order to milk at 5 o'clock, even though he did not get to bed until 11.30 p.m., or later, the night previous, as most of the men running official tests, milk four times in twenty-four hours, or at 5 and 11 a.m., and 5 and 11 p.m., making six hours between milkings. This practice stimulates both cow and owner to do their best.

The women of the house also become interested and are most anxious to know how "Molly Rue" or "Calamity Jane" are testing and they forget about the extra work caused by having an official supervisor in the house. The little extras for meals, and extra dishes to wash and bed to make, are trifles when a cow at the barn is likely to make a record of 100 pounds of milk daily, or thirty to forty pounds butter in a week. All this puts new life into the farmer, the members of his household, and the whole farm generally, I know men who went about with a, "I'm only a farmer" expression on their faces and in their manner before they began making records, but now they carry a "high head," drive an automobile and hold up their end in any company. This failure to do something of importance in the world is one of the causes of farmers not having sufficient faith in themselves and in their business, to enable them to take their proper place in the social fabric of a nation. Not long ago I was talking with the manager of a large city dairy plant. He said: "I can remember when the farmers used to drive up to our plant with a can of milk loaded on an old rickety democrat, drawn by a horse fit only for the boneyard: while the farmer himself was dressed in the poorest kind of clothing." (He expressed it "They usually had holes in the seat of their pants.") "Now," he said, "our patrons come to town in an automobile, and on the street, so far as clothing is concerned, they look as well dressed as city people. They attend banquets at our largest hotels and are as big swells as can be found anywhere." Why should they not? Who have a better right to dress well, or be "swells," if they wish to do so?

This change has been brought about by means of the dairy cow. I know that many of the dairymen to whom this manager of a city milk company referred are men who have been in the testing game for years, and have, as a result, built up herds that are not only profitable to themselves, but they have bred stock which has been the means of improving dairy cattle in various parts of Canada.

A second advantage of short-time

tests is that it increases the value of the pure-bred stock on the farm. We have already referred to one noted example. Another breeder was offering a bull calf from a cow with no record, at fifty dollars, but could not get a buyer. He tested the calf's dam for seven days. The cow made a good record—nothing phenomenal but a creditable seven-day test. He soon afterwards sold the calf for $150. Did it pay this man to test his cow? If readers will notice what is taking place among breeders of dairy cattle, they will find that almost invariably it is the men who are doing testing work who are coming to the front and those who are making big seven-day records are "getting there," a little faster than other fellows." Speed is an important factor in these modern times, on the farm as elsewhere.

Another advantage of the short-time test is that the owner pays for it. Men usually appreciate what they pay for. I would not be understood as saying anything to depreciate the long-time test maintained, supervised, and paid for, by the Livestock Branch of the Dominion Department of Agriculture—far from it, but I do think, that here, as elsewhere, if the farmer can be independent of Government aid, he is all the better for it. The short-time test is supervised by the Provincial Department of Agriculture in Ontario, but practically the whole of the expense is borne by the breeders as individuals, or by their association. The Dairy Department of the Ontario Agricultural College during 1918 held nearly 200 short-time tests on farms from near Ottawa in the East to St. Thomas in the West; from Chippawa on the Niagara River to Collingwood and New Ontario in the North. We have twenty-five supervisors at work in various parts of Ontario. These men receive $2.50 per day and travelling expenses—all paid for by the breeders. The total expense to the Department in Toronto is the small amount of extra office expenses at the College. This work has added thousands of dollars to the value of dairy stock and to Ontario dairy products, but is seldom referred to in any Government reports.

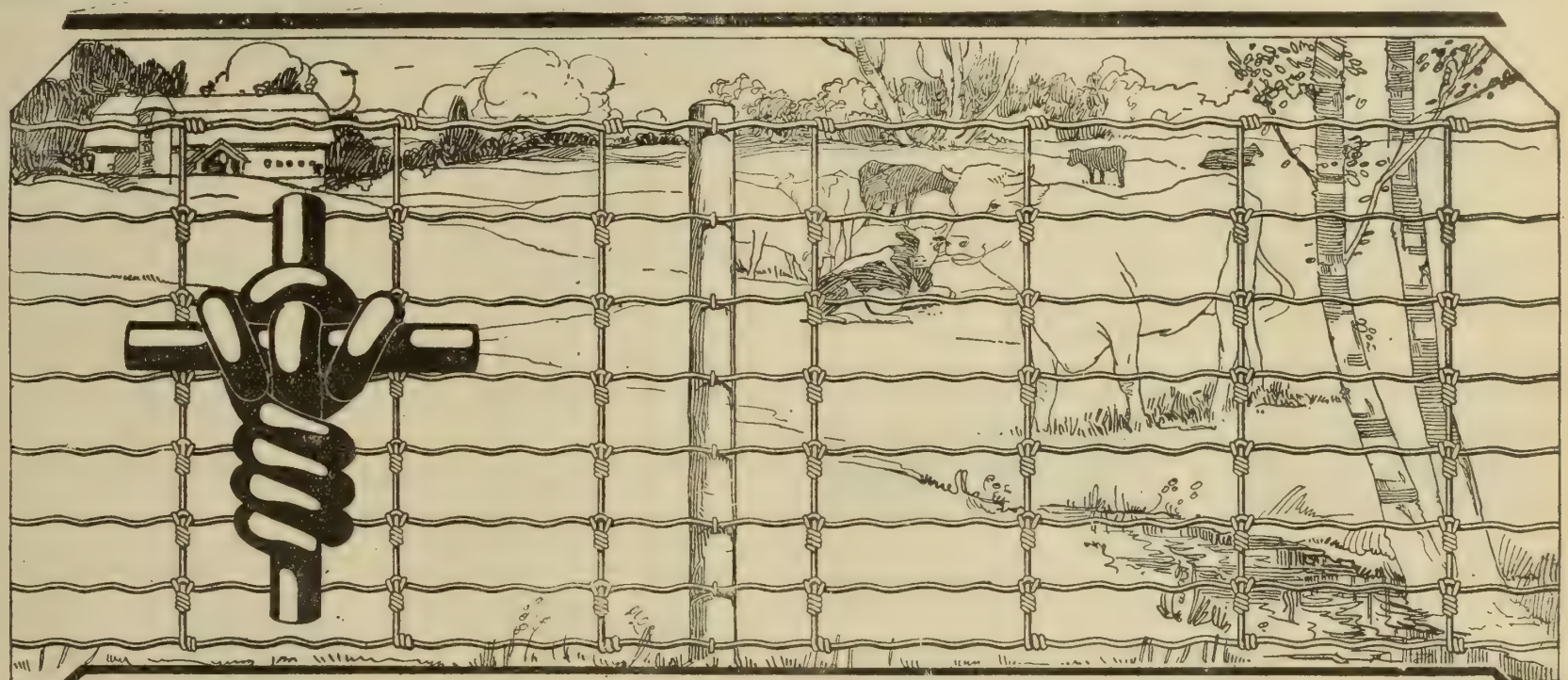
Disadvantages of Short Time Tests

A man in the locality where I was brought up, had a favorite expression—"Everything in this world has its drawbacks." There is more truth than poetry in the saying. There are some drawbacks of the tests made for a short time. Let us look at some of these, in order that we may not be charged with presenting one side of the case only.

We may mention first that some prospective buyers might be deceived when told, or when reading about, these big records made in seven days, and think that such animals are able to keep up this gait, throughout the year. Those who know, of course, expect no such thing, any more than they expect a horse which can trot or pace a mile, in less than three minutes, to keep that speed up for ten miles. The owner, or prospective buyer, does know, however, that a "three minute horse" is not likely to take any dust from an ordinary horse, during a ten or a twenty-five mile drive. So with the cow. If she can produce from eighty to one hundred pounds of milk daily for seven days, or make from three to four pounds of milk-fat daily for the same length of time, she is not likely to be in the "also milked" class at the end of the year. No one but a fool among cows would take any other view of the question before us. The man who knows anything about cows makes due allowance for the short-time records when calculating the probable yearly yield of milk or butter.

Another "half brick" which is heaved at the man making seven-day tests, is one which accuses some breeders of getting their cows abnormally fat before freshening, which soft fat is easily "milked off," and in about two or three weeks, the test of the milk from these cows is "way down." We have to admit that there are a few cases of this kind, but it "can't be did" with every cow. Not one cow out of a hundred can be manipulated to any extent in this way, although it is true that the general results are, an increased percentage of fat in the milk when the cow is decreasing in live weight, and a decrease in milk-fat

Continued on page 40



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Compare with this the method of some firms who wish you to buy direct, saying that it means a saving, that it comes to you much cheaper, and all that. True, it may come a little cheaper in price as they tell you, but it also comes cheaper in quality and that they do not tell you.

Why should you send your money in advance, wait a considerable time, as has been the case often in years past, until your fence reaches you, and before you know whether it is very satisfactory or not you have to get it stretched on the posts. Then comes the disappointment and there are very few farmers, even though there is a guarantee, who would take the trouble of rolling the fence up again, carting it back to the station and re-shipping it, at a time, no doubt, when fence of some kind is badly needed. You simply put the loss down to expense. It is the same old story that unless you pay for the quality in goods, you do not get it.

Your best interests are looked after by using the goods that a responsible dealer in your neighborhood will stand behind.

If you do not know our dealer, write direct for information.

Gates of all kinds, Bale Ties, Fence Supplies, Fancy Fences, Black Wire.

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Don't Throw Cattle-Profits Away

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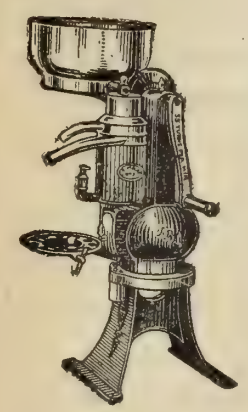
This expensive blunder is continually being made. It can be prevented by using the

Simplex (Link Blade) Separator



The Simplex has been developed, improved and perfected to the point where it is recognized as the most expensively built hand separator on the market to-day. Its high efficiency is represented in the real intrinsic value of the manufacturing cost.

The Simplex skims closely—takes all the cream, is easy to turn and very convenient in handling and cleaning. Write to-day for booklet, which gives all information and shows the high standard of quality in the Simplex Separator.

D. Derbyshire Co., Limited
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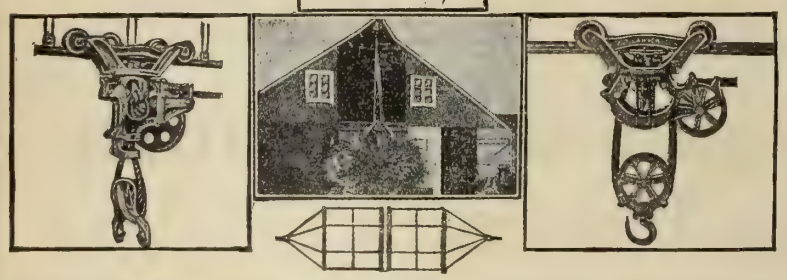
LOUDEN

Quality Service



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☐ Hay Tools. ☐ Stalls and Stanchions. ☐ Barn Door Hangers.
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I expect to build new barns size.....x.....in month of.....
I expect to equip present barns in month of..... I keep .....Cows.....Horses.....Calves. I prefer to deal through ..... dealer at.....
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RURAL MAIL

PUREBRED HEIFER HURT

C. C. H., Ontario—I have a purebred Ayrshire yearling. Last summer she ran in the orchard and when about four months old became very lame in the left forefoot. For some time I could not locate where the soreness was but finally decided it must be in the toe. I called a veterinary who said she had bruised it and to cut the one toe, which had grown long and slender, off until the blood showed. I did as he directed over three months ago, but at present she is, if anything, worse than at first. She can not bear her weight on that foot at all, but the trouble has not affected her growth as she is a beautiful, thrifty heifer and I would very much like to know if anything can be done for her.

Answer—I would presume that by this time a change has taken place in the condition of your yearling, either that it is improving or that something has developed to enable you to arrive at a better understanding of the case. It is impossible for me to say definitely what is causing the lameness. I have no doubt, however, that it is in the foot, probably a fracture or serious injury to the pedal bone. If so, there will be a swelling round the top of the hoof on the side on which the hoof is deformed.

Should nothing fresh have occurred since the date of your letter, I would recommend that you put a good blister on around the coronet, above the hoof, up to the fetlock joint, and tying a bag over the foot, above the fetlock, with a bandage to prevent the animal licking the blister off. Leave the bag on for at least forty-eight hours, Repeat the blister in from two to three weeks.

—J. N. P., V.S.

HEIFER EATS BOARDS

J. H. D., Ontario.—I have a heifer one year old who has the habit of chewing the boards of her stall. Could you tell me what to do for this? She gets lots of salts.

Answer—Your heifer evidently has Pica. I would recommend that you get your V.S. to administer about two grains of apomorphine hypodermically, once each week, for three or four weeks, or you could try the following prescription:

Formalin 1½ drams.
Aqua ad to 40 ounces.

Shake and administer once daily for four or five days. Keep the stable clean, allow plenty of fresh air and sunlight and change food as far as possible, making sure that it is of the best quality. Put a piece of rock salt in the manger and give ½ ounce of calcium phosphate in the food once daily for two or three weeks.

—J. N. P., V.S.

PEAR TREE DOES NOT BEAR

A. E., Ontario.—I have a pear tree which has been planted for over ten years. Every spring it is covered with blossoms but they all drop off and no fruit comes. What could I do to make it bear fruit? I do not know the name of the variety.

Answer.—It would seem to be a case where the variety is self sterile, that is the pollen will not fertilize the blossoms and therefore no fruit sets. From the description given, there is apparently only one tree in the garden, and if no other pears are in the neighborhood, there would be no chance for the setting of the bloom by cross fertilization.

Many of our apple and pear varieties are more or less self sterile, among pears being the following well-known varieties: Anjou, Bartlett, Clairgeau, Clapp's Favorite, Howell, Sheldon and Winter Nelis. It is unfortunate that your correspondent is not able to give the name of the variety. If the conditions stated above exist, the only remedy would be to plant a couple of trees of other varieties so that when all were in bloom, there would be plenty of pollen to set the fruit.—P.W.H.

HEIFER GOES DRY

Mrs. C. S., Ontario.—I have a young Jersey cow coming fresh with her third calf. Each time she has gone dry about the fourth month. Can you give me any reason why?

Answer.—I presume you have noticed no other symptoms of disease in your cow, as for example stomach derangement, loss of condition, hide bound, etc., nor any trouble in connection with the udder, such as caking, giving lumpy or putrefying milk, etc.

I can only recommend a somewhat general line of treatment. Watch her carefully after calving for any signs of disease of any kind, and if such should be noticed have it corrected at once. As far as possible have the same person milk her always. See that other cattle do not abuse her.

Perhaps a little simple stomach medicine would be beneficial, such as sodium chloride, sodium bicarbonate, sodium sulphate, powdered gentian, equal parts of each. Mix thoroughly and give a good big tablespoonful once daily in food.

COW WON'T EAT ROUGHAGE

J. F., Manitoba.—We have a cow that does not want to eat. When we make her get up in the morning, she is unable to rise and we have to help her to get up. She does not care to walk much when turned out. We feed her good oat straw but she don't want to eat it. She eats chopped oats very well.

Answer.—Have a veterinary surgeon examine this cow's mouth and teeth, as some irregularity of the teeth may be present which is preventing her eating roughage, otherwise I would give her a laxative, as Epsom salts 12 ozs., ginger 1 oz., after which give her a quart of good strong ale twice daily for a few days, along with the following which you may get your druggist to prepare:

Pulv. Ammon. Carb., 4 drams.
Pulv. Nux Vomica, 1 dram.
Pulv. Soda Bicarb., 2 drams.
Pulv. Antim. et Pot. Tart., 2 drams.
Pulv. Gingib., 2 drams.

Give one powder morning and night in a quart of cold gruel. The ale and powders cannot be given at the same time. I would therefore suggest using the following method. Give ale at 6 a.m., powder at 9 a.m., ale at 4 p.m., powder at 7 p.m. Steam the hay or straw to soften it, and sprinkle it over with a solution of molasses, this would make it easier to masticate.

CARNEGIE'S ADDRESS

J. M., N. V., New Brunswick.—Can you tell me the address of Andrew Carnegie?

Answer.—Andrew Carnegie's address is 2 East 91st St., New York, or Skibo Castle, Sutherland, N.B., Scotland.

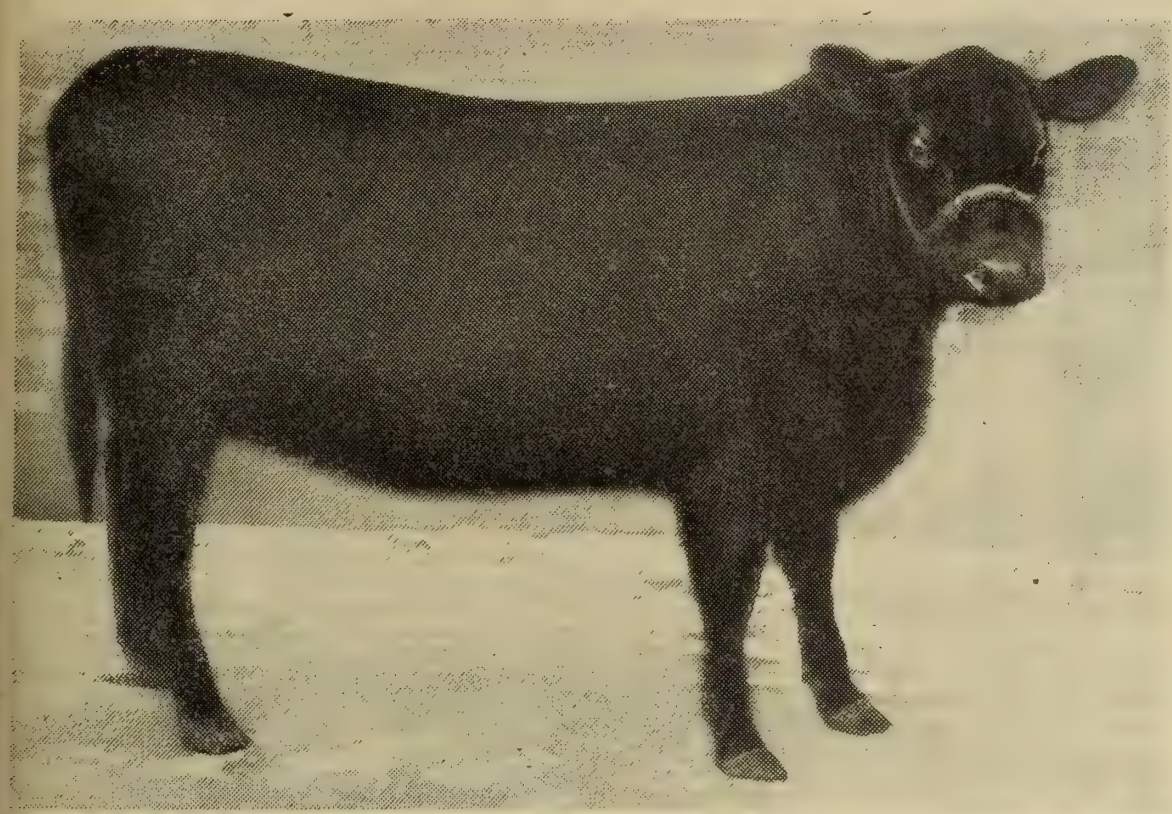
RECURRENT MASTITIS

J. L., Ontario.—I have a cow that is milking and the one quarter of her bag swells for two or three days and then it goes away for a while and then comes back. Last summer she was the same way, and at the time of the swelling she goes down in her milk. Some times it swells more than at others. When it swells really bad it seems to hurt her. When she walks she drags her leg a little.

Answer. — Recurrent mastitis such as seems to affect your cow is very unusual. You do not explain the character of the secretion from the affected quarter in your letter. To have done so would have assisted me considerably in advising you as to treatment. On the first appearance of a return of the complaint, put the cow into a roomy, airy, clean stable; blanket her if weather demands it, and give a moderate dose of purgative medicine, Epsom salts, 1 lb.; pulv. saltpetre, 1 oz.; pulv. ginger, 1 oz., giving bran mashes and a half ration of hay for, say, 2 days; not, however, if grass is available. Then to the affected quarter give plenty of rubbing with the hand, using the following liniment twice daily. Fluid ext. belladonna, 1 oz.; fluid ext. phytolaca, 2 oz.; spts. camphor ad. to 6 ozs. At the same time give internally fluid ext. poke root in one-half hour doses in half a pint of water, morning and night, until case improves. Rub the udder frequently during the day and strip the teat at each rubbing. To facilitate the rubbing when not using the above liniment you could use a little opodeldoc. Exercise after acute pain passes off is decidedly beneficial.

"Royal Purple" Calf Meal

Any Farmer can increase his income by selecting one or two calves each season to make baby beef



Mr. Farmer, if not yourself, give your boy a chance to make something for himself on the side.

MABEL—This excellent Cross-bred Angus-Shorthorn heifer (shown in photograph) was born November 5th, 1917. At thirteen months and thirteen days old weighed 990 pounds, and sold to Anderson Bros., of London, for baby beef, for which they paid 25c a pound, live weight. This calf was fed "ROYAL PURPLE" Calf Meal. It was fed and bred by Mr. Andrew Hicks, of Centralia, Ontario.

Mr. Hicks also raised BILLY SUNDAY, which he sold at Toronto Fat Stock Show, on December 8th, 1918, at auction, for 25c a pound, to the Harris Abattoir. Billy was fifteen months five days old and weighed 1,330 lbs. Said to be the heaviest calf at his age ever seen at the Toronto Fat Stock Show. He was also fed ROYAL PURPLE throughout the year.

Mr. Hicks fed 2,100 lbs. of ROYAL PURPLE CALF MEAL to all his calves last year.

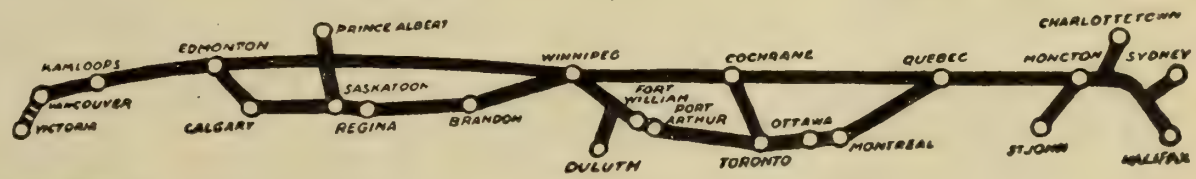
There is something wrong with the farmer's reasoning or figuring if he uses new milk to raise calves. Calves can be raised on our Royal Purple Calf Meal after three days old, just as well as on new milk, at 30% of the price of new milk. This we have proven beyond a shadow of a doubt.

We admit there are meals sold on our Canadian market called "Calf Meal" that would make better pig feed, because they do not take the place of new milk, but our Royal Purple product contains all the elements found in new milk.

If you will write us we will send you one of our new books, which tells you why our meal will produce calves like are shown in this advertisement, and compares it with other meals taken from Government Bulletin No. 388.

Royal Purple Calf Meal is sold everywhere by dealers. If your particular dealer does not handle it, write us, and we will tell you where you can get it.

Made by THE W. A. JENKINS MANUFACTURING COMPANY, LIMITED, LONDON, ONT.



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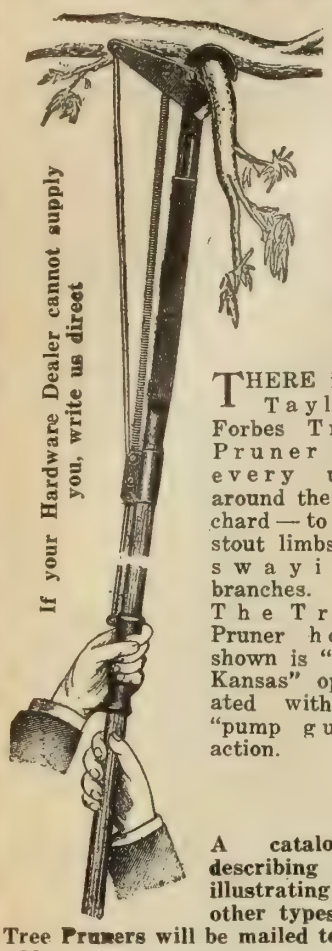
Taylor-Forbes TREE PRUNERS



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Cutting a limb one and three-eighth inches thick.

THERE is a Taylor-Forbes Tree Pruner for every use around the orchard — to cut stout limbs or swaying branches. The Tree Pruner here shown is "The Kansas" operated with a "pump gun" action.

A catalogue describing and illustrating our other types of Tree Pruners will be mailed to any address on request.

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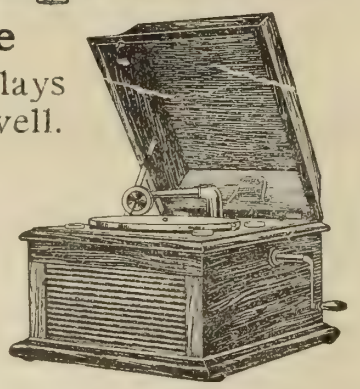
— the machine that plays all records equally well.



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The machine illustrated above can be secured for as little as $5.00 down, and the balance payable on easy instalments. There is no better talking machine upon the market. It has every new and worth while improvement. It plays all makes of records and its tone is well nigh perfect. Cabinets have a beautiful piano finish.

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Send me full particulars of your free offer of a year's supply of records if I buy a Cremonaphone Talking Machine.

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TRUCK FARMING

Onion and Cabbage Prices

THE following data published by the *Market Growers' Journal* will be of value to all truck farmers in Canada. It will be noted in the case of cabbages, that the lowest prices during most of the nine years were obtained from Oct. 15 to Dec. 15. The two exceptions were in the years 1916 and 1911. In 1916 certainly war extremity made matters turn differently. And these prices are an index more or less correct of prices in Canada during this time. Onions 6 years out of 8 are higher in March.

MONTHLY PRICES OF CABBAGES.

The following table gives the United States estimated average price per 100 pounds to producers of Cabbages, monthly, for nine years:

	1918	1917	1916	1915	1914	1913	1912	1911	1910
Jan. 15	$2.74	$3.95	$1.17	$1.36	$1.87	$1.26	$1.89	$1.56	$1.87
Feb. 15	3.26	5.65	1.21	1.41	2.07	1.17	2.24	1.48	2.05
Mar. 15	2.86	6.77	1.38	1.38	2.03	1.03	2.88	1.26	2.14
Apr. 15	2.98	7.61	1.50	.1.99	2.24	1.15	3.17	1.33	2.29
May 15	3.23	7.53	1.93	2 53	2.05	1.58	2.98	1.38	2.77
June 15	3.55	5.10	2.27	2.34	2.61	2.18	2.67	2.46	2.19
July 15	3.41	3.23	2.15	1.95	2.66	2.64	2.29	2.93	2.27
Aug. 15	2.96	2.19	2.26	1.61	1.74	2.15	1.88	2.47	1.89
Sept. 15	2.45	1.76	2.17	1.24	1.50	1.79	1.25	1.94	1.94
Oct. 15	2.16	1.79	2.40	1.00	1.31	1.69	1.08	1.58	1.58
Nov. 15	1.99	2.66	2.61	.97	1.14	1.58	1.04	1.51	1.36
Dec. 15	....	2.28	3.04	1.07	1.26	1.75	1.15	1.83	1 49

MONTHLY PRICES OF ONIONS

The following table gives the United States estimated average price, cents per bushel, to producers of Onions, monthly, for nine years:

	1918	1917	1916	1915	1914	1913	1912	1911	1910
Jan. 15	178.9	208.4	113.2	88.9	121.0	81.6	117.0	101.0	94.4
Feb. 15	183.2	357.9	126.3	97.6	140.7	77.5	140.0	104.0	160.1
Mar. 15	147.0	476.2	130.3	95.3	155.3	77.0	167.0	105.0	82.5
Apr. 15	134.1	495.6	123.5	104.4	159.2	79.0	175.0	119.0	103.4
May 15	134.7	489.0	123.3	102.9	152.6	87.2	177.0	129.0	102.8
June 15	137.7	308.0	133.8	102.9	140.8	95.6	155.0	134.0	105.8
July 15	162.6	201.0	147.3	93.0	170.4	101.7	114.0	122.0	104.5
Aug. 15	164.7	154.7	133.5	86.3	137.9	105.1	100.0	116.0	99.8
Sept. 15	163.3	142.9	122.9	82.8	103.3	103.9	89.0	104.0	99.4
Oct. 15	153.2	167.5	131.4	94.8	88.3	110.2	85.0	102.0	93.2
Nov. 15	143.1	176.6	153.8	94.8	84.4	144.9	84.0	103.0	94.6
Dec. 15	.....	177.0	175.7	99.6	92.3	114.9	84.0	113.0	98.8

Green Crops for Fertilizer

By F. B. HOUSSER

EVERY truck gardener knows the difficulty of securing an adequate supply of barnyard manure just when he needs it. Unless livestock can be kept in conjunction with other farm operations a grower is forced to import a large proportion of his supply of manure in car lots from city dealers. The price is fast becoming prohibitive and the supply so limited that orders must be placed months in advance before the growers' needs are definitely known. All manner of foul seeds are contained in stockyard manures and frequently when the car arrives the buyer finds he has been sent fresh instead of well-rotted material. Still more frequently extra help for unloading is at a premium.

During the past two seasons conditions have become so unsatisfactory that we have been forced to devise a system whereby we were not dependent on the city stockyards. The solution of our problem was finally arrived at by a decision to specialize.

Our two most profitable crops were onions and early potatoes and it was decided to concentrate on these two. The fertilizing was to be done entirely with green crops and commercial fertilizers. Spring vetch was picked as the most desirable substitute for manure.

Our choice was based on two or three features peculiar to the vetches, namely: the rapidity of its growth, its immunity from early frost damage and the high per cent. of its mineral content.

One ton of green vetch plants contain about 1,650 pounds of water, 13 pounds of nitrogen, 3 ponds of phosphoric acid and 10 pounds of potash. The average yield from an acre of vetch is about 5 tons green.

A ton of well-rotted manure contains about 1,500 pounds of water, 10 pounds of nitrogen, 7 pounds of phosphoric acid, and 5 pounds of potash. Peter Henderson claimed that a single garden crop requires an application of 25 tons of well-rotted manure to the acre, costing to-day, about $62.50 as against $15.00 for the vetch.

You will notice that vetch has the

The boy is useful in seeing that none of the hoes become clogged with dirt as the seed drill covers a rough piece of ground

greater amount of nitrogen and potash, the two most expensive fertilizing elements as well as the most difficult to obtain. At the present time the Dominion Government is offering nitrate of soda at a special bargain price of $82.00 a ton. The potash supply is practically controlled by Germany. The vetch manure contains no weed seeds and can be left unplowed all winter as a cover crop to prevent washing on the slopes.

We did not wish to go too hard at the start, so as an experiment we tried the following plan:

On the first day of May half a field was planted to Irish Cobbler potatoes. The other half had been sown to onions in April.

The potatoes were dug with a digger on the 15th of July, and sold on the early market in Toronto at a good price.

Immediately afterwards the field was planted with spring vetch at the rate of 2½ bushels to the acre. No plowing was necessary as the seed was sown broadcast after the potato digger and harrowed in.

By the first of November we were able to plow down a mat of green vetch so thick that a rolling colter would scarcely get through. Onions were sown the following spring where the vetch had been plowed down, and potatoes were put where the onions had been the year before.

The yield of onions from the patch where the vetch had been was 550 bushels to the acre as compared with 450 bushels on a patch, which the fall before was dressed with 20 tons of well-rotted barnyard manure.

The yield in either case was not exceptional but it was obtained from ordinary farm land which had never been used before for onions.

The cost of dressing the acre with 20 tons of manure was $50.00. The cost of the green manure was $15.00. In the latter case no weed seeds were planted. One of the most disagreeable and expensive jobs in the season's operations was eliminated. The plowing was completed before the frost. The physical texture of the soil was so improved that one half of the working was required to put the land in shape for seeding, and last but not least, there was considerably more money in my pocket.

OUR MISUNDERSTOOD NERVES

Continued from page 14

of admission into our asylums shows a steady increase after each extensive epidemic of these infectious diseases in the province. Nearly fifteen per cent. of all insanity is now attributed to the poisons of the common infections; these are regarded at least as its immediate exciting causes.

The second commonest cause of insanity is overwork, especially under unfavorable conditions. The percentage of operatives in our modern factories who are made at least temporarily insane by the long hours and the monotony of their work, and of school children in Germany who commit suicide, is pitiable.

The next commonest cause of nervous diseases is under-feeding, particularly a shortage of certain elements which will be deficient in any but a rich and well-varied diet. Chief among these come fats, particularly butter and cream, which on account of their expensiveness are apt to be omitted or limited in amount. Paradoxical as it may sound, nearly two-thirds of our brain and nervous system consists of fat, a delicate, phosphorized, fatty substance called lecithin, which plays an important and most vital part, not only as a food and protection to the nerve-cells, but by entering into their chemical reactions in a most intimate way. We are only just beginning to understand the reason for the high value which man has always on butter and cream, or, failing these, other animal fats in his dietary. No vegetable fat or oil will fill the bill; and animal fats other than butter or cream will fill it only imperfectly, especially in children. You can starve your nerves into "seeing things," not only by fasting, as the founders of primitive religions did when they wanted to get new revelations and see visions, but also by living upon a monotonous, inadequate diet, poor in fresh meats, fresh vegetables, fresh fruits, and butter-fat.

So that if your child is thin and nervous and excitable, the best thing to do is to let his mind entirely alone, forget that he has a "temperament" and try to put some fat on him. By the time you have him comfortably plump, his nervousness will have totally disappeared, nine times out of ten. Watch his instinctive likes and dislikes carefully; there's nearly always a reason for them. If he can't eat a particular food, give him something else of equal nutritive value that he does like. If he can't stand work in the heat, or bright light in his eyes, or stuffy rooms, change his work or turn him outdoors to enjoy himself and grow strong and happy. Keep a child happy and healthy, and his intellect and morals will take care of themselves. Humor him more and yourself less, and he'll cause you far less anxiety in later life. Some children never get really enough to eat until they are recovering after a severe illness.

IF you find yourself nervous and worried and threatened with nervous breakdown, don't scold yourself or pass good resolutions to stop worrying, or assure yourself that there is nothing really the matter: all that won't help you a particle. Just get busy and find out how you are abusing your stomach by not giving it proper food or time enough to digest it; or your muscles by working too long hours indoors; or your lungs by breathing foul, stuffy air in offices, kitchens, or bedrooms with no windows open; or your eyes by not getting enough sleep at night.

When you have located your offense against yourself, stop it—there will usually be several of "it"—and begin to work and eat and play and rest sensibly and rationally. The first thing you know, your nervous symptoms will clear up and disappear. If they don't, it will be because you have a brain tumor or some hereditary defect. Even diseases of the imagination will disappear under

Continued on page 37

Strong baking powder is needed

GOVERNMENT Standard flours are coarser and heavier than the flours you have been using for years, and they require a strong, reliable leavening agent.

Egg-O is a pure, strong, *double-acting* baking powder.

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EGG-O Baking Powder

You can use sour milk, sweet milk, buttermilk or water with Egg-O—a different and better baking powder.

Egg-O Baking Powder Co., Limited, Hamilton, Canada

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Commonwealth Barn Red

Your barns are burning up slowly. It is a very slow process, usually called DECAY. But its destroying power is as certain as it is slow, and the only sure protection is the best paint you can buy.

Use *SHERWIN-WILLIAMS* COMMONWEALTH BARN RED on your barns and other buildings. It is the best paint made for this purpose. This bright, rich Red,—so prosperous looking—is decidedly an economy. Pay out a little money for paint instead of many times as much for rebuilding.

That's common-sense, and it applies just as strongly to the use of *SHERWIN-WILLIAMS* Wagon and Implement Paint, to *S-W* Buggy Paint, and to *S-W* Auto Enamel.

Remember, paint is a protector, not an expense.

Look up the S-W agent in your district and ask him about the other S-W Paints and Varnishes too. Also, write us for a free copy of "The A. B. C. of Home Painting."

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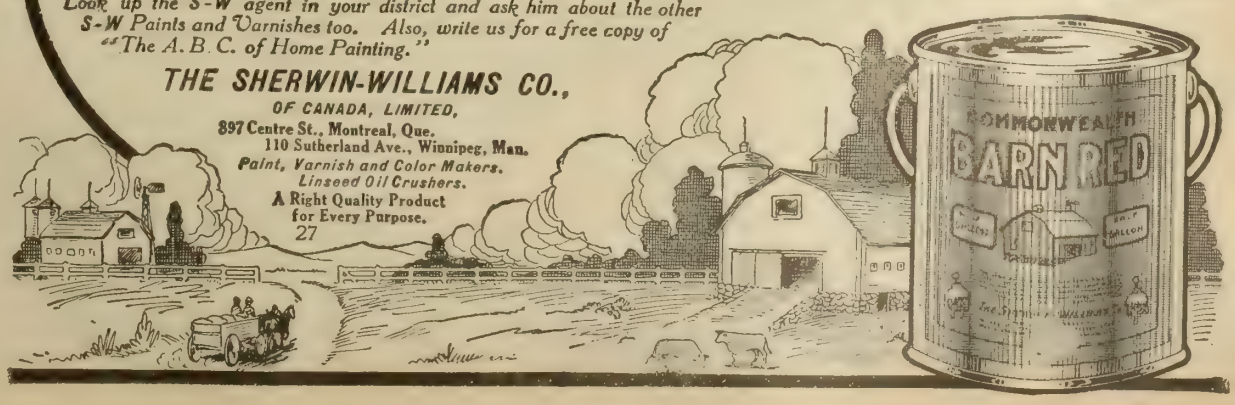

THE Frost & Wood Binder is built for farmers who appreciate that this is the implement actually responsible for getting the crop. Here you must look for absolute dependability—giant strength—light draft—sure tying—and proven ability to get all there is of any crop, light or heavy, long or short, tangled or straight.

KNIVES are smooth running—no jerking; 10-in. tire and cleats on power wheel mean plenty of power and strength; adjusting screw on cross shaft takes up any wear on bearings, ensuring efficiency and no delays; capacity of elevator is extra large — special provision against bunching or clogging; all working parts easy to get at and understand.

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A Wonderful Binder

HERE is the Binder that gives you just that service. More than that—it's very easy to operate and the working levers can be handled by a boy—in fact, any one who can drive can run a Frost & Wood Binder. Its light but immensely strong steel main frame and power wheel stand the hardest jolts over many years of service. High grade roller and ball bearings at every friction point guarantee easy work and light draft.

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Good work on a big prairie farm.

WHAT IS THE IDEAL TRACTOR?

Continued from page 9

power. High speeds, combined with heavy and continuous loads such as are required of a tractor, in the heavy grind of farm work, are almost too much for the worm drive.

The old type of exposed pinion and the master gears on the drive wheels, such as are used on steam tractors, is a thing of the past in modern tractor design. The twist and torsion in the structural steel frame made it almost impossible to get a good contact all along the surfaces of the teeth of these two gears, and the wear is therefore uneven and excessive. This is especially true where horizontal motors were used, and probably most apparent in connection with those of the two-cylinder type.

The roller chain drive overcomes the troubles just mentioned and allows a motor to be hung on a built-up frame which may vibrate without seriously affecting the transmission efficiency. The chain drive may also do away with an intermediate gear and thus cut down friction. The roller chain drive will stand more abuse from mud and exposure to dust and dirt, than any other method of transmission; and when enclosed will give much better service. The ideal transmission is of course completely enclosed and running in oil.

While on the subject of transmission, the operating levers are worthy of consideration. The fewer the levers the better. Accidents are sometimes caused by having too many levers to handle. One lever for changing speeds and reversing, and the clutch lever for throwing in the motor, are sufficient, except possibly for a foot brake, which every tractor might well have.

The ideal tractor will have three speeds forward. Two speeds cover all normal demands, but three would be even better. The middle speed should be the plowing speed, and should be 2.2 to 2.3 miles per hour—2.3 would be preferable as the slippage of the drivers would cut the actual plowing speed to at least 2¼ miles, which is a rapid plowing speed.

The low speed should be from 1½ to 1¾ miles per hour. While plowing or hauling, if the tractor comes to a soft spot or a patch of gumbo or a poor piece of road, or a sudden rise in the ground, the operator can then drop into low gear and increase the drawbar pull at the expense of speed, and go ahead without difficulty or delay. Then, too, if the valves need grinding or some other difficulty cuts down the power of the motor for the time being, one can work on low speed for the rest of the day if necessary, without reducing the number of plows, or the hauling load.

The high speed is for getting out to the fields or moving the threshing outfit from place to place; and 4½ to 5 miles per hour is about right. Too high a speed will cause accidents in hauling, as many portable outfits such as the separator were not built with the idea of being hauled at more than a moderate pace.

The main points in tractor design have now been briefly discussed with the exception of that most important item—the motor, and its accessories; which will be taken up in the next article. Which is best, the high speed vertical motor, or the ones of the horizontal type?

NOTE.—The prospective tractor buyer will do well to save these articles for reference when looking over catalogues of the different tractors. They will act as a guide in comparing one tractor with another. The third of the series will appear in an early issue.—EDITOR.

THE CARELESS FARMER IS EXPENSIVE

By R. D. A. Drummond

THERE are a lot of the old type of one-cylinder vertical engines still lying around the country, particularly in the East, and some of them are working and some are not.

I've run across quite a bunch of these old engines that were discarded because the owners couldn't keep wrist pin bushings in them and after a little doctoring, they did pretty good work again.

In the top of the connecting rod is a hole which is supposed to catch oil from the splash and this oil is supposed to keep the pin lubricated, but it doesn't catch enough oil and the bushing soon wears out.

The remedy is to drill a hole in the piston head just over this hole in the rod and tap in a large size, round-headed screw of some sort or rivet in a boiler rivet. In either case the part that projects through the piston head must be smoothed off even with the piston for, if a point is left, it will become red hot and cause pre-ignition while the motor is running.

In making repairs to ignition systems, sometimes a new wire is needed and, occasionally a solid wire is the only kind available. When this kind of wire is used, you want to be very careful how you use your knife, for if you use your knife at right angles to the wire and run it around the wire to make an even cut, you're pretty sure to nick the wire and a little nick in a solid wire will soon cause the wire to break with the vibration of the engine.

It seems rather foolish to tell a full grown man that one of the most important things in life is for him to read his instruction book, but I have made many a trip quite a long distance just because a man didn't take the trouble to read his instruction book.

I remember one time in particular, I was away up the north-western corner of Manitoba and got a hurry-up call to get down to the south-eastern corner of the province as fast as I could to see what was the matter with a man who had a 2½-mile-an-hour tractor and could only get it to go about 1¼ miles an hour.

I drove nine miles to the train, travelled nearly all night and found nothing wrong except that the clutch was slipping and in his instruction book there were explicit instructions for the care of the clutch.

THE ADVANCE OF AGRICULTURE

GOOD agricultural implements are a prime necessity in modern farming. We are beyond the age of scraping the top of the earth and swinging the hoe. We are in the age of the tractor, the disc plow, the riding cultivator, the electric light plant and the gasoline and coil oil engine on the farm.

We now realize that a certain sort of one-horse plow is a better plow than some that were discarded years ago. We

can appreciate the labor-saving in a certain brand of hoe above another brand. We can calculate when a truck is profitable and when an engine on a farm can be used at an advantage.

Better farm implements, intelligently used, may make it so that a man will produce more from an acre.

Once upon a time we sowed wheat broadcast; later we used a drill. The uniformity of the planting paid for the drill in a year.

Once we broke clods with a hoe. Now we cut the clods to pieces with a machine.

In buying agricultural machinery the prospective buyer should ascertain his needs, should know the quality of his own land and procure for that land all that can bring out its richness.

The supreme advantage of good farm machinery is in labor saving. There are two sorts of labor saving. One is in reducing the necessity of the number of hands and the second is to have the number of hands do their work with less muscular energy.

Good agricultural implements reduce the burden of the toil each man must do on the farm. Men have gone away from the farm because of the immense drain on the physical power of each individual thereon. Improved farm machinery, then, is in line with a good house on the farm, good barns, home telephone and other things that go for contentment in the country.

CHEAPNESS VS. QUALITY

THE following ancedote can be applied without misrepresentation to the claims of butter vs. oleomargarine, as will be shown later: A little boy and his father went for a walk one summer's day, and as they passed an ice cream vendor, the boy turned beseechingly to his father and said, "I wish you'd buy me some ice cream, father, I do feel so warm."

His father gazed at him in surprised displeasure and then answered: "No, no, Ikey, no, no; but I will do this. I will tell you some ghost-stories that will make your blood run cold."

The public in its search for cheapness at any price, believes the oleo packers who tell it that there is no need of buying genuine butter when they can give it a substitute at half the price which can be eaten the same as butter. And when the public has swallowed their claims and their product, it finds that it has been consuming "ghost-stories," instead of the important life-giving factors which are in dairy butter only. Perhaps ghost-stories in lieu of ice-cream and oleo in place of butter can satisfy some people, but it is true that "you can fool some of the people all of the time, but not all of the people all of the time." Oleo vs. butter is a case in point.

APPLE BUD-MOTHS IN NOVA SCOTIA

The apple is attacked by a number of different insects. In Nova Scotia the caterpillars of the Bud-moths are probably the cause of more loss than all the other insects combined. The Entomological Branch of the Dominion Department of Agriculture has just issued Bulletin No. 16, entitled "The Apple Bud-moths and Their Control in Nova Scotia," by G. E. Sanders and A. G. Dustan. This bulletin of 24 pages gives an account of the life-histories of the four destructive bud-moths which occur in that province. The chapter on the control of these insects discusses results obtained from spraying experiments, following which definite control measures are recommended. Useful information is also included on parasitic insects and other natural enemies. Fourteen illustrations appear in the bulletin. These show injured blossoms and fruit, various stages of the insects, etc. This publication will be of much value to apple growers in Eastern Canada. It can be obtained free of charge on application to the Publications Branch, Department of Agriculture, Ottawa.

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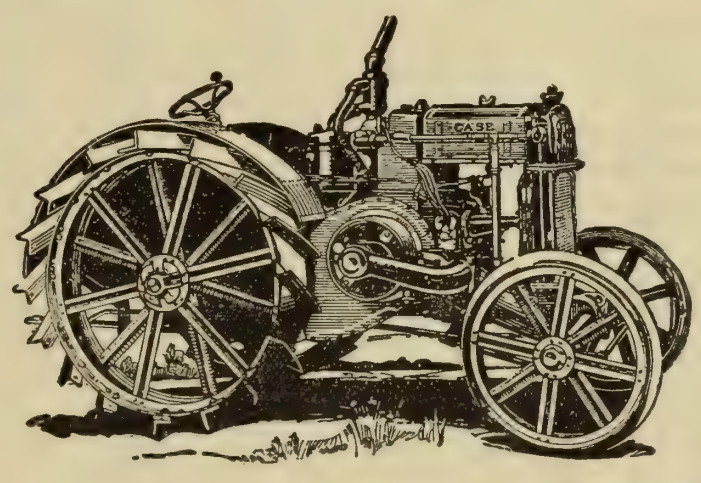

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Yields and Expenditures

By HENRY G. BELL, B.S.A.

IT is a universal law that as the yield per acre increases the cost of production per unit per bushel, bag, or cwt.—decreases. The decrease may not always be in exact proportion since the application of certain factors in order to produce larger yields means the expenditure of money. Nevertheless, within wide limits increase in yield per acre of crops means profitable increase in net returns. Probably the point is best illustrated by a table recently published by New Jersey Experiment Station. This table deals with the returns obtained by Monmouth County farmers on their specialized fields of potatoes, which shows that as the acre yields increase the labor income of the potato grower increases.

Yield in Relation to Labor Income

Yield in Bbls. per Acre.	Yield in Bus. per Acre.	Average Labor Income.
60-	165	$ 172
61-70	167¾-172½	657
71-80	173¼-220	740
81-90	222¾-247½	1,091
91-100	248¼-275	1,645
100-plus	277¾-plus	1,907

Now the principle illustrated by the findings of this investigation is equally applicable to the production of wheat, oats, hay, corn and other crops.

In pioneer days all that was necessary was to break the sod and sow or plant the crop. Nature did the rest. The soil's bank account of fertility however, has been drawn upon to such an extent that it no longer is possible to draw indefinitely upon the reserve account. More thorough tillage, the use of better quality seed has greatly improved yield as has also the application of stock manure. But the time has come on many farms when the price per acre at which the land is valued necessitates even increased yields in order to make paying interest on investment. This is a manufacturing problem. It requires close study and must be dealt with in precisely the same way as other manufacturing problems.

It does not matter how good the machinery, how expert the labor and management, if the raw material is not present in sufficient supply the product of the factory cannot be profitable. This is just as true of the field as it is of the factory. Many a yield at the present time is below par because the soil supply and balance of plantfood obtainable by crops is below requirement. In emphasizing this factor of plantfood supply we are not in the least belittleing the other necessary factors of good drainage, plantiful humus supply, proper tillage, best quality seed etc., but we are putting our finger upon the factor which has been most productive in profitable crop yield increase.

Recent investigations of the U.S. Department of Agriculture show that at present there is a decided levelling up of returns that the farmer obtains and what it costs him to live. In the early months and years of the war, crop prices vaulted rapidly, but cost of labor and supplies and living expenses, and prices for farm produce have become equalized. This does not mean that conditions of 1914 are universally attained again. In fact, it is my belief that they never will be duplicated in the history of this country. In 1914 the farmer got less for his crops and it cost him less to produce them. To-day if he is getting twice as much for his crops it is costing him almost a parallel increased amount to produce them. For the keen business-like farmer this is an advantage, but for the man who is obtaining approximately the same yields as he harvested in 1914, this change of conditions does not bode well. In short, changed economic conditions are widening the cleavage between the good and the poor farmer.

A prominent member from Sarnia, of the Ontario Vegetable Growers' Association speaking before their 1917 Convention touched a vital point when he said:

"The average farmer in Ontario is land poor, because he is plowing and sowing more than he should be. He can't feed the land. He is mining it. The question of fertility in the soil is of very first importance. The gardener knows that, but the average farmer does not. He pays less attention to the manure and fertilizer end of it than he should do. He does not feed his land at all, and if he would supplement his manure with a little fertilizer he would get better results than he does to-day."

This statement introduces what we consider one of the vital points in bettering the present economic conditions of the farm. Larger yields must be obtained. This goes without saying. Furthermore, they must be obtained at a profit. Still if we are to judge by the experience of practical farmers and careful experiments conducted for many years these highly profitable yields can be obtained, by giving more attention to the fertilizer side of the problem in addition to all the other factors which together make best farming methods.

There is a considerable agitation throughout the country to induce Canadian farmers to pay more attention to livestock production. This is well and good, because it appears from latest reports that the foreign market for Canadian livestock and livestock products is opening more favorably every day. Representatives of Canadian livestock interests, returning from Europe, have reported this fact within the last two weeks. However, the fact also must be kept in view that it is very doubtful if it would be either wise or possible to so increase the livestock of Canada as to provide sufficient manure for the maintenance of the fertility of the soil, at a standard which would insure crops of sufficiently increased yield to pay a reasonable interest on investment. In addition to this fact it must be kept in mind that the use of automobiles and tractors on Canadian farms is increasing rapidly, and increase in gasoline power does not tend to increase the manure supply of the country.

Hence the Canadian farmer has but one recourse. If he studies the methods of his contemporaries across the sea he will make wider and wider use of fertilizers, because fertilizers supply him in concentrated and readily available form with just the same plantfood as is carried in stock manure. If they are wisely and liberally used in connection with proper rotation of crops, so that by growing sufficient humus this factor in the soil is maintained, fertilizers will increase the average crop yield of this country at a highly profitable rate.

If the farmer has a considerable amount of manure he can accomplish these profitable yields by adding acid phosphate to his soils in addition to manure, this especially for his grain crops such as wheat, oats, barley and corn. That such a practice is profitable has been established by at least three of the largest American Experiment Stations, namely Ohio, Indiana and Pennsylvania. This acid phosphate makes up for the deficiencies in the plant ripener (phosphoric acid) which exists in manure. If you have relied upon clover, alfalfa, or some other legume to build up your soil, you have been adding nitrogen, (the plant grower) and humus, but you have not been adding any plant ripener or strengthener, (phosphoric acid and potash). In fact, the nitrogen which you have been adding is found on the knots on the roots of the legume crops, and must wait until the temperature of the soil becomes sufficiently high so that the soil bacteria will cause the breaking down of these knots before a considerable supply of nitrogen is available to the crop that follows clover. Therefore, in actual practice it has been found highly profitable to use on grain crops following legumes, a fertilizer supplying a considerable amount of phosphoric acid, along with 1 to 3 per cent. ammonia or nitrogen which will give the tiny crop a quick start.

Where no special attention has been given to maintain the fertility of the soil the use of complete fertilizers has proven most profitable, because it not only starts the crop off stronger, but follows it through its growing season with a supply of the plantfood which causes it to ripen, and that which

Continued on page 40

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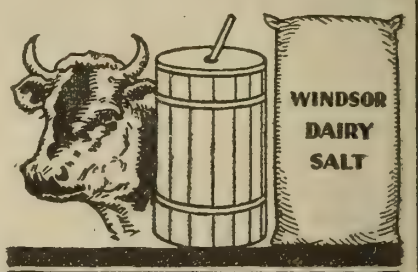

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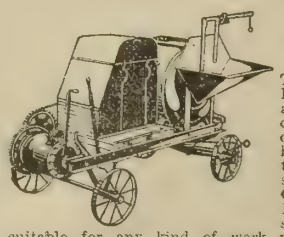

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POULTRY

Ducks Eat Many Larvae

By IVOR C. BICE

THE following paragraphs, copied from a "Bulletin of Foreign Agricultural Intelligence," obtained from the office of the Canadian Commissioner of the International Institute of Agriculture, Ottawa, adds a new interest to the industry of duck raising:

Ducks as a Preventive of Malaria and Yellow Fever

"Ducks, which occur in all regions of the globe, are amongst the greatest enemies of mosquitos, and consequently of yellow fever and malaria. Their value in this respect has been determined as follows: By means of dams two pools of equal area were made in a stream. Ducks were placed in one and fish in the other. The former was speedily cleared of mosquitos whilst the second continued to maintain the insects in all stages of development. Wild ducks were then introduced and found to prefer the insects to all other foods. At the end of 24 hours no pupae were found in the pond and after two days all the larvae had been destroyed. These experiments confirm the observations of William Lockwood, who found that the duck was particularly adapted to devouring the larvae on the surface of the water, and of McAtee, who found mosquitoes in the gizzard of a wild duck.

"The mosquito has numerous animal enemies, of which the duck is the most widespread and consequently the most suitable to clean up unhealthy marshy districts which it would be too costly to drain."

This extract suggests the thought that ducks are an especially useful fowl to have on farms where a creek of the "spring and fall" variety leaves stagnant puddles of different sizes and depths along its course for the greater part of the summer, when the flood season is over and the creek is no longer "running." But successful duck raising does not absolutely require a stream or a pond that does not dry up in midsummer. Numbers of ducks can be raised and never have a "swimming pool" if receptacles are provided deep enough for the ducks to dip the whole head under water, for ducks seem to need to keep the eyes and heads well washed. I have raised a flock of 200 ducks in a summer and they never had a puddle other than those provided by a rainstorm.

The chief point in duck farming is to get the young ducks on the market as soon as possible. I fed very little dry grain, but as soon as the ducklings were past the "mash"-feeding stage, I put the grain in troughs and kept water on it. The ducks preferred this to the dry grain and grew remarkably fast, were plump and well flavored when roasted.

I never left a large number of young ducks together, but found they did better if ten or a dozen were in each pen. The pens were made by nailing boards together just high enough so the ducklings couldn't crawl over. These pens are easy to move a few feet in any direction as required. Once the ducklings are feathered out they can all run together without much danger of starvation to the weaker ones.

Ducks Free From Disease

Ducks are not attacked by disease very often. In fact, the only time I ever knew of any trouble was several years ago, when something like cholera killed off nearly all the flocks in this neighborhood. The only symptom was a peculiar odor that I cannot describe, but ducklings that seemed perfectly well, would, in a few minutes, seem to take a sort of convulsion and die before anything could be done. I lost 14 fine ducklings in one day and couldn't get anything to check the trouble. I was complaining to an old lady friend that my flock would soon see a finish at that rate, when she remarked, "Why not try spirits of camphor?" I was glad of any suggestion and tried it at once on a pen where I could detect the telltale odor. I put a drop of saturated solution of camphor into a teaspoonful of sweet milk and just poured that much into each duck in that pen twice a day till the "cholera odor" disappeared. Whether the camphor treatment was the one thing necessary, or whether the disease had run its course, I do not know for certain, but I lost only two or three more ducks after starting the use of the camphor, so I pass it on for what it may be worth. However, other people to whom I gave the prescription had the same experience as I had, so we have some belief in the value of the treatment. The trouble has never appeared since, in this section, that I ever heard of.

Ducks have many points in their favor, being hardy and easily raised, maturing early so that a large flock can be got out of the way long before the chickens are ready to market. The old ducks are about the largest egg producers of any of the farm fowl. They are particularly useful in destroying large quantities of slugs and beetles that infest the grass roots, and also those moths that seem so plentiful near the ground just when the dew is falling.

The kind of ducks to have depends on the breeder's fancy, but as far as weight is concerned I had the best satisfaction from a cross of Pekin and Aylesbury. Pekin ducks are a good kind and hardy, as also are the ordinary, colored breed mostly seen on the farms.

COMBINE TO SELL EGGS

By JOHN PAWTUCKAWAY

PATTERNING their organization on that of Fraser Valley milk producers, British Columbia poultrymen are getting ready to market eggs and dressed poultry co-operatively, with headquarters and selling machinery in Vancouver. The Poultrymen's Union of B.C. is the name selected. Capitalization will be $100,000. Local associations will be formed at various points, like those of the milk producers. Members will be required to subscribe for stock on the basis of flock strength, $1 for each 10 hens owned.

All members will be required to ship their production to the Vancouver receiving station. Several large meetings in the interests of the organization have been held in the Fraser Valley, and keen support aroused.

A piece of legislation of paramount importance to British Columbia egg producers was recently introduced at Victoria by Hon. E. D. Barrow, Minister of Agriculture. It forces dealers handling Oriental (Chinese) eggs to mark them, and also to mark the package containing them, so that character of the stock will be fully revealed.

The same act would compel sellers of "incubated" eggs to mark them. This refers to infertile eggs "tested out" early in the incubating process. Restaurants and other public eating places using Oriental eggs are compelled to publish the fact with a conspicuously placed sign having letters at least four inches high. This strategic provision should be helpful. The average con-

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sumer can be depended on to have a prejudice against Chinese eggs sold as such, but low-grade restaurants will have no such compunctions. Somewhat similar legislation has been recently before the Washington legislature. The whole Pacific Coast, British Columbia to California, is natural egg-producing territory, but the very real menace of Chinese eggs can only be met by adequate legislation. Chinese eggs received through Vancouver have recently been sold in New York.

British Columbia poultrymen share their home market with several outside regions. Large quantities of eggs have been brought in this spring from the Petuluma, California, district. Eggs from the prairie provinces are a common article of commerce in B.C.

WHITE DIARRHŒA

By Maud Leopold

NOW that the hatching season is in full swing, white diarrhoea—that dread disease the mention of which strikes chill to the bones of nearly all poultrymen—is ready on the warpath, waiting greedily to snatch every available chick that is not sufficiently strong to withstand its attack.

As a disease in itself, judging from the investigations made by many prominent writers on the subject, it cannot be avoided entirely, as it often originates in the ovary of the hen that lays the egg, and therefore the chick is born with it. It is very contagious and quickly spreads from chick to chick.

We must do our best to fight white diarrhoea by endeavoring to watch very carefully those small details that mean so much to the vitality of our little chicks, and therefore making them as far as possible immune against this dreadful disease. Some of the essential points to guard against are the following:

Improper incubation. Dirty incubators or nests placed in sheds or cellars having poor ventilation and lack of sanitation.

Overcrowding in the brooders or under hens.

Overheating of brooders with poor ventilation.

Improper feeding. Too much or too little of the wrong kind of food given at irregular hours.

Dirt. Either in drinking or feeding utensils or anywhere surrounding the chicks.

If all these details are attended to, the chicks raised under such conditions are bound to be stronger and healthier than those reared by more careless methods, and being stronger will withstand "baby" ailments, including white diarrhoea, very much better.

Perhaps some will say that the extra work and time entailed will soon eat up the extra profit, and in this connection the word "system" might be brought into play. It is not a very large or important looking word, but it means a whole lot to the poultryman as well as to other workers.

Regarding the treatment of white diarrhoea, once the disease has got a firm hold, very little can be done and the quicker the little patients succumb the better. By all means they should be isolated from the rest of the flock as soon as the first signs show up, which is during the first part of the second week as a rule, and from then onwards until about the fourth week where the infection has spread badly. The symptoms are very easy to detect, by that sleepy, miserable look accompanied with a constant "peeping" and often a shrill cry. The abdomen is swollen looking at the back, and the whitish discharge sometimes tinged with brown, which is characteristic of the disease, soon makes its appearance from the vent, which often becomes entirely closed up. A little olive oil or vaseline will help this condition if there is any likelihood of the chick living.

Sour milk or buttermilk has been found helpful in checking the disease, inasmuch as it aids the digestion and it should be freely given to chicks as soon as they are ready for their first feed.

Farmers Buy 60% of Automobiles

It has been estimated that the farmers purchased 60% of all the automobiles sold in the Province of Ontario last year. While we have no figures at hand regarding the other Provinces it is quite possible that the percentage may be almost as great.

This furnishes a striking example of the progressiveness of Canadian agriculturists.

Motor power may well be utilized for travelling and hauling, and, to a large extent, for farming. Still, the most up-to-date farmer could not consider entirely dispensing with his horses, which only tends to demonstrate that in the pursuit of progress it is necessary to have the assistance of those faithful animals we have always more or less depended upon. We look on them as the old stand-bys—always ready and willing to help us out whenever called upon.

In our everyday life in both the country and the city we cannot get along without those necessities that help us over the "breach."

Take the matter of health, for instance. In almost any home there is sure to be found an old reliable remedy such as Dr. Thomas' Eclectric Oil. No matter what may come or go, those who have used it would no more think of being without it than being without the assistance of the horses on the farm.

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In case of sprains or strains, stiffness, scalds, burns, and cuts, Dr. Thomas' Eclectric Oil gives immediate relief. The skin readily absorbs this healing oil and its soothing powers stop the suffering.

In the stable for diseases or accidents to the horses you rely on, as well as to the other animals, here the value of Dr. Thomas' Eclectric Oil is demonstrated to the same extent as in the home.

Your animals are subjected to aches, pains, wounds and sores which should be relieved as quickly as possible. In all such cases Dr. Thomas' Eclectric Oil is of real service and will often result in saving costly vists to the veterinary surgeon.

In our progress let us always bear in mind that motto "Be Prepared." This remedy will help you to look after your own health as well as that of your stock.

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The "Backward" Child

Continued from page 11

ferent schools and seven different school populations with varied methods of school government. Teachers are hard for a child to understand anyway, but who could understand and adjust himself to so many teachers in one short school lifetime! So the pupil's mental action does not flourish any more than a plant would flourish if it were as frequently uprooted. Try special attention, personal interest and "intensive cultivation" before the family flit again. If you are really interested in the child, he can hardly help being interested in himself and in his work. It may be only "cranking" that he needs—"three extra notches of gasoline," as it were. Try him "on the battery"! It is not every child who has a "self-starter." Before you know it, you are fond of the child, and then you will get on, and so will he.

THIS brings us in sight of the psychology of childhood. This new and fascinating subject is only beginning to be guessed at. The mind of a child is sometimes engaged in a life and death struggle with some complete misapprehension which terrorizes him. He has "got in wrong" and he cannot recover himself. His initiative has been blighted by sarcasm or by the slings and arrows of outrageous fortune; it is cut down and withered. He is not going to attempt anything. He fears his fate too much. He does not know how much you can do for him, so he wraps his talent in a napkin and buries it in the earth, and that was a pity, for he had only one talent. So he gets more and more behind. From him that hath not shall be taken away even that which he hath. Again, you are his only chance. Do you know anything about this boy at all? No. Well then, somebody does, and unless you intend to let him go under and drown, you must find out from someone else what life-line he can cling to. Is he fond of pets? *Make a survey of his possibilities and do, for God's sake, give him a chance!*

Sometimes the home conditions are very bad. It is hard for the school to do much for the product of a bad home. So there is a law on the statute books of Ontario, a law which has often helped both the child and the school, providing for proper care for neglected children. You might need to invoke that law.

Some children are quite slow of comprehension and dull of mind. That is not their fault. They usually come by it honestly. They are apt to be rather backward, but we should not set too high a school standard for them. In character-training, they are often at the head of the class, and *who would hesitate between achievement in character and achievement in academic subjects?* History, literature, composition and "citizenship" often show their solid worth and real thoughtfulness. Give them a helping hand with other subjects and don't keep them too long at things they can do without.

So much for the backward child—the greatest realized asset of the nation. The Victory bond committees mined a great deal of gold in Canada. It was valuable, but its value is as nothing in comparison with the riches hidden away and lost in wasted lives—citizens who from childhood to old age are simply "duds" because no one ever sets free their powers. The great war showed us the amazing riches of heroism, resourcefulness, power, initiative, perseverance, unselfishness—in one word, character—in the poorest of us. The great peace will show us how to set about realizing these in establishing a new world where education shall not be a name and democracy a delusion.

"In re-construction, education is the only thing that really matters."

Teacher—Save that Backward Child!

BUT in some cases the child is not backward. He is mentally defective. That is, the cause of his backwardness is irremovable. Of course he may have some of the removable defects too, which we must remove if possible. The teacher is not responsible for this mental defect, nor for diagnosing it, nor for its consequences. Neither Socrates nor Arnold of Rugby could educate the mind of a child who has little or no mind to educate. Do not try to teach the child what he cannot learn. Teach him what he can learn. What the teacher has to do is to develop the powers of the child. We must first find out what these powers are.

"Nature has put the defective child in a class by himself, and we should follow her example." But where there is no class for the defective child by himself or with other defective children, should he be excluded from the regular class? Not unless his presence there seriously interferes with the progress of the class and the work of the teacher. The rights of the majority and the normal child must not be interfered with. It is usually a mistake to attempt to keep a child in school whose mental age is below the legal (permissive) school age, or one whose chronological age is so far in advance of the average age of the class as to render his presence undesirable. It is not uncommon to find in the primary or first-book class a defective child of eleven or twelve years. This is not suitable.

Of course, in any case, the principal, the parents, the family physician, and if possible, the school doctor and school nurse should be consulted privately by the teacher, and every respect and consideration should be shown both to the child and the parents. Any action of the school authorities, such as requesting that the child should not come to school, should usually be fortified by a medical opinion.

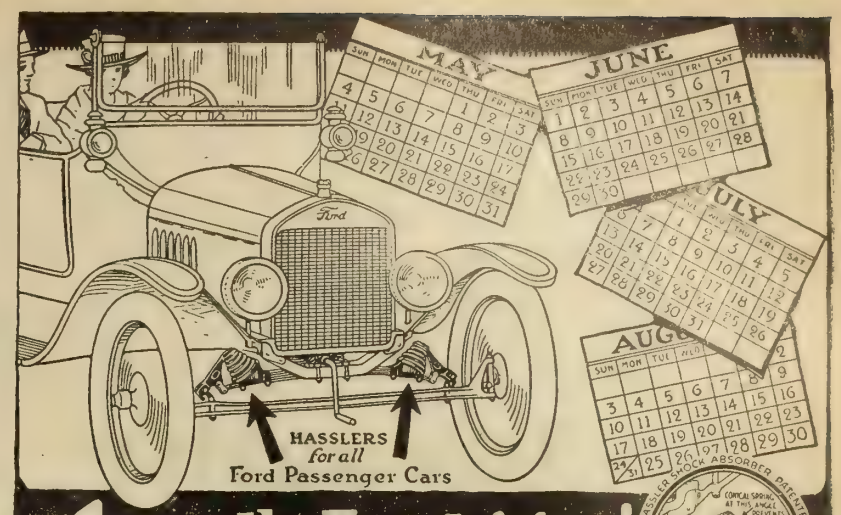
Where the defect, however, is not so pronounced, effort should certainly be made by the school authorities to give the child some education. It is often well to give him a seat in a part of the room by himself and to give him at the same time the privilege of doing some simple duty, usually entrusted to one of the best pupils. If his desk and seat can be in some way favorably placed or distinguished or specially equipped, it will help to make his school life happier and more successful. But do not shut your eyes. Teachers often "get used to" a child's defects and forget them. Remember the age of the child in any estimate you make of his powers. Show the child great kindness and respect and see that your pupils do the same. It is "part of your job" to carry him along. Make the pupils feel that it is "part of their job" too.

Always—Always—Always — encourage the mentally defective. Never—Never — Never — under any circumstances say or do anything to discourage them. They have not the normal power of self-dependence and self-encouragement. Let them have some special possessions, and teach them to take care of these. Such lessons will be of real value.

It will repay you richly to teach your pupil good personal habits and hygiene. Everything we can teach him which enables him to keep himself and his clothes clean and neat is of great advantage. Be prepared to spend much time and attention on this.

Analyze the simplest thing you teach him into tiny steps—so small that the ordinary pupil would take half-a-dozen such steps in one mental movement. Realize that one such tiny step is a great achievement for the mental defective, and then drill and drill and change and repeat until this step becomes automatic. Aim at industrial training and industrial habits. But we must always be clear that our pupils can really profit by what we teach.

Mental defectives are much more easily "bored" than the normal children. Mental effort fatigues them quickly. A big boy of seventeen years



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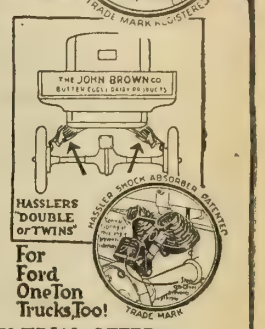

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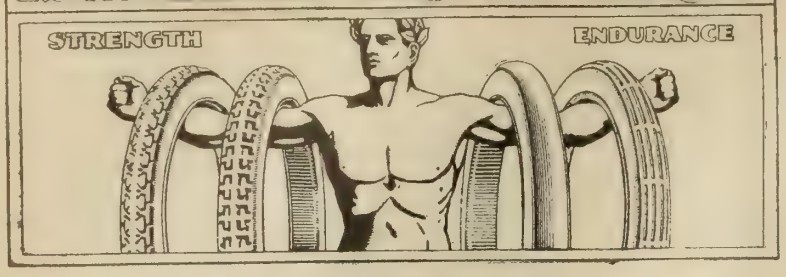

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chronological age and mental age seven years may be more fatigued by five minutes' book learning than five hours' hard work. Give them very short lessons.

MENTAL defectives differ among themselves as much as normal people do. They all have their good points. There are a great many different types, such as the "Smiler," almost unteachable; the voluble and loquacious—often so glib as to deceive even a magistrate; the restless type—never still; the silent type, who scarcely ever speaks; and the good, kind, decent ones, who are a comfort.

Mental defectives are very different at different times. They have good and bad days. They frequently have a "twenty-four hours memory." The tablets of memory on which you think you have written some lesson to-day may be found quite blank to-morrow. If that happens constantly, do not waste your time. You will never get any result but wasting your time and the ratepayers' money.

Keep these children busy to the limit of their capacity, but do not fatigue them. They are often good handworkers, and they can be educated through the hand better than through the head. They are often clever mechanically.

Respect and develop their powers of affection, but do not let them grow sentimental. Never teach them anything that they will not use in after life. Develop anything that will help in the slightest degree to make them useful in the home, in the community, or as wage-earners, however humble the work.

Never lose sight of any chance for vocational training of any kind. Of course, it is usually of a very simple and humble kind.

Try to get the training started at as early an age as possible. Has your pupil any younger brothers or sisters? Are they defective? Can they be given some training? The hopeful years are from three to thirteen. After that the progress is not so good. But all mentally defective children who come to school have *some* intelligence, and can learn something at school.

It is probable that a special timetable ought to be made for your mentally defective child, but this will take time to develop. Perhaps we place too much emphasis on writing and reading. What use is writing going to be to your feeble-minded pupil? What will he do with it? It is likely that you will be able to teach him to write his name. That will be useful to him. Anyone who has taught a feeble-minded child the alphabet by means of giving him letters three or four inches high, cut out of wood, to handle and play with, will remember what a help these letters were. The phonic method is not always the best to use for such children. And do not try to give him all the lessons yourself. Your other pupils will often succeed in teaching him things that you cannot teach him. If there is a sign "For Sale" on a house near by, borrow it and use it to teach your boy these words. That lesson will lead to several others, and gradually the child may learn to read well enough to help himself and interest himself.

Of course the higher grade mental defectives or "morons," as they are called, or border-line cases, can learn to write or read easily. Readers of Dickens will remember Mr. Toots and his prowess as a letter writer. Mr. Toots got on quite well in Dr. Blimber's Academy. So will the Mr. Toots in your class—in a way. Writing from a copy—large round hand—is a favorite employment with many feeble-minded children. It does them no harm when they can do it fairly easily. They learn neatness and some control of hand and fingers. But in teaching reading and writing, do not use superhuman efforts to teach the child. It is sometimes agony to him and always exhausting to you, and no good comes out of it. Teach him what he can learn.

WE may almost say, as a rule, that a child who is fairly good in arithmetic is not mentally defective. Arithmetic is the greatest school difficulty that a feeble-minded child has to meet. Do not drill him forever on tables. He may learn them by dint of repetition, but often he cannot use them and will, therefore, forget them. Long division is usually the upper limit of a feeble-minded child's arithmetic. But concrete work he can often do. Let him weigh, measure, number, to his heart's content, and procure, or make simple apparatus for his own use. Think of simple industrial work for him.

Drawing is a fine subject for children who can manage paper and crayon or slate and pencil. Give them pieces of cheap paper or wrapping paper. Let them cut out pictures and advertisements and use them. Many mentally defective children have good powers of imitation.

Music is an exceedingly important subject for mentally defective children. For some reason, which we can only guess at, they nearly all have some idea of music and most of them are very fond of it. To learn to play on some instrument is a great thing for such a child and lessons of this kind are very helpful.

Simple physical training as to step, gait, posture, reflex action, response to command, is important. Give the child every possible opportunity for this. Here again, as in nearly all the other subjects, a senior pupil can give excellent lessons, with some supervision. *Every effort should be made to help mentally defective pupils to join in simple games.* They may not play like the rest nor with children of their own size and age, but they can learn to play.

Occupational training, pasting, matching pictures, using a board with holes, in which pegs or other things can be fitted, sorting different things, stringing beads, arranging colors, following an outline with tracing paper, simple weaving, sewing, knitting, coloring and all forms of work with paper, may be utilized in teaching children. But do not allow them to keep the supplies. Keep the supplies for them in a special cupboard and, if convenient, provide lessons for a month or more, or for a whole school term, with little or no repetition. This can be managed easily by using in the different seasons of the year the material that nature supplies, or using materials that the industries of the neighborhood render available or using waste products. Sewing on cards, working in wood sometimes, string work, making mats and simple baskets, and, if the pupil progresses so far, manual work and weaving may be gradually introduced. With girls, domestic and home training is of the greatest value, and, indeed, it is very important to co-operate with the occupations of the parents and the work carried on in the home in every possible way.

EUROPEAN MARKET FOR POULTRY

A French poultry expert, according to advices received by the Canadian Trade Commission, states that there is an urgent need in France for 3,000,000 breeding hens at present. It is estimated that egg and poultry production there in the last four years has decreased 50%. Over 6,000 hens have been given by British traders to help the restoration work in Northern France.

Conditions in Poland are said to be such that hundreds of thousands of fowls are wanted, and British experts are advocating that the newer breeds be at once introduced into the devastated areas.

The Trade Commission suggests to poultry men and farmers a continuance of the Greater Production Campaign of last year. The cheapening of feedstuffs is in their favor.

Canadian exports of eggs in 1918 roundly totalled 4,000,000 dozen, one-half the quantity exported sixteen years ago. Great Britain alone before the war imported 190,000,000 dozen annually.

One broad idea which the Trade Commission is trying to impress on the agricultural and manufacturing interests is that the present emergency demand in Europe should be regarded as the stepping stone to permanent trade. The field in the poultry trade will be ample for some years to come.

FRUIT GROWING

These Okanagan Apples Netted $535

By CLINTON TUCKER

NOT so many years back profit figures of British Columbia orchard operation were common things. One couldn't walk around a corner without bumping into such statistics. The entrance of many a newcomer into fruit ranching was paved with the floods of publicity literature in which the profitableness of the business was proved by the symbols which, proverbially, don't lie. A cessation of such stories inevitably occurred when the "dark" years arrived for orchardists on both sides of the boundary.

Remembering that the profitableness of an apple crop in 1918 proves nothing concerning the 1928 apple crop, it is engaging to peruse figures of 1918 profits which Okanaganites are beginning to "trot out." The general observation should be made in the beginning that the Okanagan is entitled to fruit profits. Only the orchardists themselves fully know the splendid pluck and courage which kept the industry going in the years of bitter discouragement. Okanagan growers have applied to their farm business a degree of concentration, resulting in maximum efficiency in culture, preparation for market, and sale, such as few farmers in Canada have exercised.

In 1918 they had undeniably a very profitable year. Business conditions in the fruit districts are reported "Never better." Moreover, with existing general conditions in both the American and Canadian orchard industry, several "good" years appear imminent. Such is the belief of Frank Waugh and other well-known American authorities.

The W. H. Binn orchard on the Coldstream road three miles from Vernon is owned by a soldier overseas, but that it has been well managed in his absence 1918 results attest. The 5.8 acres are mostly in Rome Beauties. The 1918 operating expenses of all kinds amounted to $514. The fruit produced sold for a net of $3,215.19, leaving a gain of $2,701.19. Interest and other charges properly deducted would reduce this somewhat, but not in great measure.

Something of a profit from less than six acres!

Numerous orchard holdings in the Okanagan are handled by agents. In most cases the war has led to absence; in other cases the owners are Old Country people who never have seen their property. Absentee ownership of farming land is theoretically undesirable—for the owner—but certainly not always. A Kelowna orchard concern which manages several orchards for absentees sent a net profit of $1,400 to one owner who had never seen his land. The tract contained ten acres and 1918 was its first bearing year. Not bad!

This same concern from a second ten acre tract, owned by an absentee, harvested apples valued at $8,000. On a ranch of 16 acres, a profit of $2,232 was made.

The Kelowna Land Company is an example of one of the larger orchards which did well. This company produced approximately 14,485 boxes of apples, and had heavy production of cherries, with smaller output of prunes, pears and plums. Its total gross return was $36,000. The management does not indicate the profit made, but it is known to have been a big one. This company's orchards are still far short of maximum production, only about 50 per cent. of the trees being in bearing.

Favorable conditions in the fruit industry will undoubtedly attract many to the dry interior valleys, which offer in addition the advantages of wonderful climate and beautiful scenery. For a period of years there was absolute stagnation in farm real estate there. Numerous transfers have been made the past winter, however, at very good prices. An increase in the demand for such property is looked for. Nobody suggests that the farmer should be a real estate speculator, but he ought to own property for which there is sale at fair prices in case of necessity or choice.

OUR MISUNDERSTOOD NERVES

Continued from page 29

this treatment, because a perfectly healthy brain and nerves, which means one supplied with plenty of rich, pure blood and given a proper combination of exercise and rest, will not go out of their way to imagine calamities that never happen. It is only poisoned, overworked, or underfed nerves that indulge in this kind of self-torture.

If you want clear, steady nerves for yourself and your children, keep away from all the infections that you possibly can and you will sidestep two-thirds of your risks of serious nervous disease, unless you happen to be one of the unfortunate five or ten per cent. who are hereditarily defective or unstable.

Next, give yourself and your children, particularly your children, abundance of good, sound, nourishing food as varied and of as high a quality as your pocketbook can afford. You can hardly overfeed an active, growing child, provided the food is absolutely sound and of good quality and he eats with an appetite. His hungry and rapidly developing nerve-cells, with their jacket of fat, will pick out the combination of proteins, enzyms, vitamins, and fats which they need and which are present in only small amounts in any one food, and his active muscles will burn up all the rest clean.

Next after the avoidance of infections and the engulfing of plenty of proper food for the prevention of nervous disturbances come sufficient amounts of sleep and rest. The vast majority of people probably undersleep and would be benefited distinctly by from one to three more hours of sleep out of the twenty-four than they take. Sleep is not a negative process by any means, but a positive and active one, and the longer we can keep our body-batteries recharging themselves in that state of unconsciousness, the more and better work they will do the following day. The only limit to the amount of sleep for a child is all that he can be induced to take, and it would do most grownups good to sleep nine hours every night and stay in bed every Sunday morning until they woke up wide awake of their own accord.

It should not be forgotten, however, that as it is the business of the nerves to be sensitive and quickly responsive, they need, not only adequate rest and food, but plenty of exercise at their own particular game in the form of excitement and amusement. The best cure for nerves and nervousness is something interesting to do and to think about, a full, active, enjoyable life, with "something doing" every day in the week but one.

The more brains you have to start with, the less likely they are to break down, and while some of our neurasthenics and psychothenics are the very salt of the earth, a good many of them have to be told that what their brains chiefly ned is a little rational exercise occasionally. The brain and the nervous system, like everything else in the body, are improved and strengthened by being worked vigorously within the limits of their powers and nutrition. Modern civilization does this more perfectly and wholesomely than any previous condition of man.

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Made of Open Hearth Steel Fence Wire—tough, elastic, springy—will not break or snap under shock or atmospheric changes. Our method of galvanizing prevents rust. Will not flake, chip or peel off. The joints are securely held with the "Peerless Lock" and can be erected on the most uneven ground without buckling, snapping or kinking. The heavy stay wires prevent sagging and require only half as many posts as other fences. Keeps all animals out, confines the smallest chicks, they can't get through.

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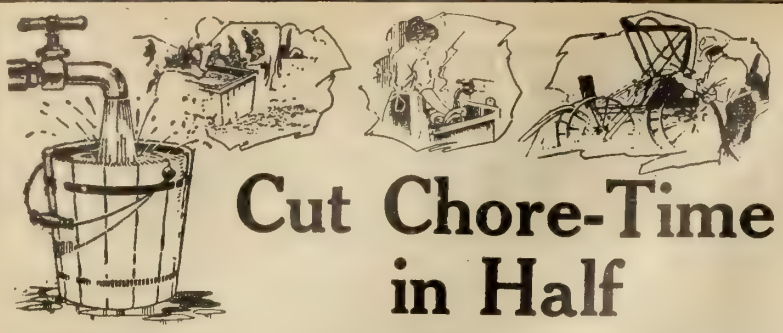

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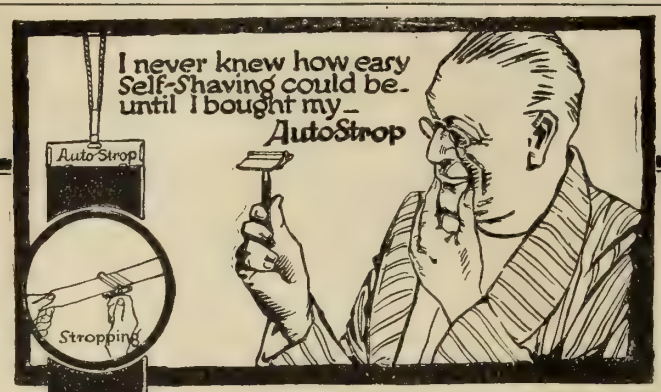

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The safety construction of the AutoStrop Razor enables the novice to use it with the same ease and dexterity as the veteran shaver. The self-stropping feature gives him a clean, keen-edged blade for every shave; while throughout stropping, shaving and cleaning the blade remains in the razor, thus removing the troublesome necessity of taking the razor to pieces and assembling it again.

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FARM ENGINEERING

Finding a Safe Load for the Tractor

By Major OLIVER B. ZIMMERMAN

MANY a good tractor has gone to the junk heap years before its time for the sole reason that from the beginning it was overloaded. A good farmer would not think of working his horses until they fell in their tracks. The warning given by their heaving and panting would not pass unheeded. But with a tractor the heaving and panting—slowing down of the speed, knock or pound in the cylinder, killing the engine by a load it cannot overcome, seem to go unheeded. As a result, one part after another gives way, until the farmer finds himself all too soon with a worn-out tractor.

A misunderstanding of how much a horse can do and how much a tractor should do undoubtedly accounts for many an overload. We probably think one horse gives us one horsepower, three horses, three horse-power, and a tractor rated at 10 horse-power on the drawbar more than three times as much power as a three-horse team.

Does it? The average horse can exert a pull of about 200 pounds traveling at 2 miles per hour.

200 lb. $\times$ 10,560 ft. = 2,112,000 ft. lb. in 1 hour.

2,112,000 $\div$ 60 = 34,200 ft. lb. in 1 min.

1 horse-power = 33,000 ft. lb., per min., therefore a horse pulling 200 lbs. is developing a little more than 1 mechanical horse-power.

How much plowing could horses do exerting just this amount of power? The average resistance to the passage of a plow through the soil is about 5 lb. per sq. in. of the perpendicular cross section of cut. This resistance varies with different soil types and conditions as shown in the table herewith:

	Lbs. per sq. in.
In sandy soil	2 to 3
In corn stubble	3
In wheat stubble	4
In blue grass sod	6
In June grass sod	6
In clover sod	7
In clay sod	8
In prairie sod	15
In virgin sod	15
In gumbo	20

(The soil resistance per square inch of furrow slice turned varies greatly in different sections of the country. Tests made by the Hyatt Roller Bearing Company showed that Texas cornstalk stubble required an average of 8 pounds to the square inch of furrow slice turned, while Bermuda sod required 11 pounds to the square inch of furrow slice.)

Suppose we used 14-inch plows and plow 6 inches deep. A cross section of this plow would be 14$\times$6 or 84 square inches. At an average pressure of 5 lb. per sq. in., we have 5$\times$84 or 420 lb. per plow. Two plows would require a pull of 2 $\times$ 420 or 840 lb. We found previously that at 2 mi. per hour a horse pulled about 200 lb. and exerted a little over 1 horse-power. If the horse had exerted only 188 lb. pull it would have been exactly 1 horse-power. Dividing 840$\times$188, we find that we need practically 4½ mechanical horse-power to pull the two 14-inch plows 6 inches deep.

As the plows start into the soil the horses must overcome 1,200 to 1,500 lb. resistance, or they must exert from 6 to 8 horse-power. They can do this for a short time. After the plowing is well started the resistance lowers until it reaches normal, or about 840 lb. or 4½ horse-power. Suddenly the plow strikes a root or a stone or hard pan. Up goes the resistance again to 8 horse-power.

It must be apparent from this that it wouldn't be safe to go into a field with plows needing 4½ h.p. for ordinary work unless you had at least again as much power in reserve to take care of emergencies. A horse capable of pulling 1 horse-power on an average can exert from 4 to 5 horse-power for a short pull. It is this reserve power which enables horses to get through with the work.

The same reserve power is needed in a tractor. If 4½ horse-power ordinarily would handle the load, your tractor should have 4½ more in reserve, or a total of 9 horse-power. There are times in plowing when the resistance is doubled. When those times come, if you have no reserve, you put on an overload, and in just a few moments do an untold amount of injury to your tractor.

A throttle-governed tractor with plenty of reserve power is no more expensive to operate than one working up to full capacity all the time. Throttle-governed tractors use fuel only in proportion to the load, consequently a 10-horse tractor with a 5-horse load uses no more fuel than a 5-horse tractor with the same load. When an overload comes your reserve power will take you through without any change in the engine speed or any excessive strains.

Find the safe load for your tractor. The ideal way would be to try the tractor on various parts of your farm with a dynamometer between the tractor and the plow, so that you can get the average soil resistance per plow bottom. Knowing the rated horse-power of your tractor and its speed and the average soil resistance of your farm, by using the method of figuring given above you can easily tell how many and what size plow bottoms to use to avoid all danger of overload.

Government Experts Caution Against Overloading Tractors

The United States Government, in Farmers' Bulletin No. 719, makes some very important statements along this line, as follows:

"It does not pay to overload a tractor any more than it does to overload a horse. Three plows behind a two-plow tractor will cover only a little more ground, as a rule, than will two plows, because the tractor usually will travel a little slower, partly because the motor is overloaded and does not maintain its proper speed, and partly because the drive wheels will slip more with a load heavier than the machine was designed to pull. As a result, delays on account of small holes or slight grades will be more common, as will also mechanical difficulties."

Symptoms of Tractor Overloading

In running a tractor the operator soon gets to recognize the sound and regularity of the exhaust as an indication of its speed and running condition. An overload reduces the normal speed of the motor, which in turn cuts down the number of exhaust sounds per minute. Any load which slows the tractor down in this manner is an overload and is more than the prescribed amount it should pull with safety.

A common practice when the motor of a tractor slows down under an overload is to disengage the clutch and allow the motor to regain its normal speed, then engage the clutch again, relying upon the momentum of the heavy flywheels to "pull her through." This is dangerous practice, for the almost irresistible power of the flywheels throws excessive strain on the other parts of the tractor and something must give way sooner or later. In cases of this kind it would be better and safer to ease up the load in starting and until the tractor can handle it and still keep up the normal speed of the motor. To illustrate the point, imagine a team of horses hitched to a rope that in turn is attached to some heavy object. Suppose the horses were started into a gallop as the slack was taken out of the rope. Then the terrible strain of the load would very likely throw the horses off their feet, injuring them as well as tearing the harness to pieces.

Variation in kinds of soil, degree of moisture and topography of land make it impossible to state how many plows a

certain tractor will pull. In view of this fact, and in view of the fact that the average operator of any size tractor almost invariably tries to get more out of his machine than it was built to do, he is taking the same chances that he would take if the tractors consisted of so many horses that he was taxing to their limit for the sake of turning over a few more furrows daily. The sensible thing to do with any machine, and especially the tractor, which represents a rather larger investment than the average farm machine, is to treat it considerately with respect to the amount of work required daily.

The Tractor Not to be Compared With the Automobile

Everyone knows how rapidly the automobile depreciates in value. At the end of four years' time an automobile is worth only about 30 per cent. of the original investment. A small fraction of this is due to its being "out of date," yet the same rule applies to standard makes of cars whose manufacturers do not change materially their models from year to year. Such cars, on the average, have a maximum speed of 50 to 60 miles per hour. They run, possibly, at an average speed of 15 to 20 miles per hour when used throughout these four years. Under ordinary conditions only 30 per cent. of their rated horse-power is used. It is only under unusual road conditions, such as in mud or sand, climbing hills, or when a maximum speed is desired, that the automobile is taxed to its limit. Notwithstanding the fact that the automobile is not taxed to its capacity for any length of time, yet it is common knowledge that its value, due to wear and tear upon the motor and upon the car in general, causes a falling off in value of 70 per cent. in four years.

The tractor on the other hand, is designed to do heavy work to the limit of its rated capacity, all the time. It has not great surplus of power as the automobile has for getting out of tight places except by means of additional lugs for handling its prescribed load. It is not expected that the power of the tractor will be abused or overtaxed, because this only leads to dissatisfaction later when the owner finds, by his persistent overloading, that he has decreased the period of service of his machine.

TAGS FOR SHEEP

R. J., Ontario.—Please let me know where I can purchase metal markers or bands for putting in the ears of sheep.

Answer.—You will get these by writing to the Rideau Specialty Company, Smith Falls, Ontario.

MARE DOES POORLY

A. T. U., Nova Scotia.—I have a mare which will be six years old next June and is in a scraggy and unthrifty condition. Was in pasture all summer, did no heavy work. She is very thin in flesh and will water every time I go to stable, but not much at a time. Please answer through FARMERS' MAGAZINE *what treatment you would advise for a cure.*

Answer.—The information given regarding this mare is insufficient on which to base a diagnosis. I would presume she is suffering from chronic dyspepsia, which may be due to bad teeth, intestinal parasites, or general weakness of the stomach. The catarrhal condition of the bladder is no doubt secondary to the dyspepsia. This is evidently present. Would recommend a good dose of laxative medicine followed by the following powder: Pulverized soda bicarbonate 3 drams, p. colchicum 1 dram, p. pot. nit. 2 drams. Mix and make one powder. Make eight of the same and give one morning and night in soft food.

I would further recommend to have the mouth examined, also the urine and the bladder by a veterinary surgeon, as the bladder might require irrigation. A good tonic and some boiled flax seed in addition would doubtless benefit the mare considerably.—J. N. P.

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It does the work of several men and eliminates the worry and expense of ordinary farm labor. No matter what type of farm you have there is a "Z" Engine that suits your requirements.

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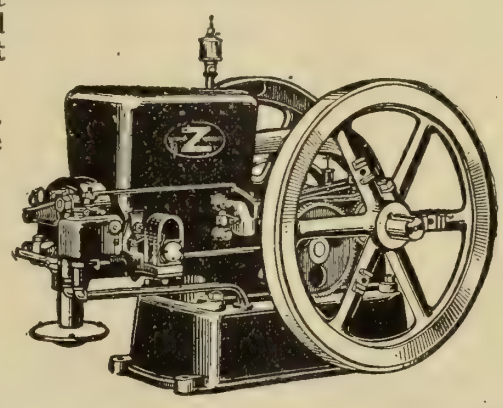

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A quaint U.E. Loyalist House on Bath Rd., near Kingston, Ontario. Built 1793 by Wm. Fairfield, a pioneer of Ernestown. The house has been occupied for four generations and is in a fine state of preservation.

A 126-Years War

HOW many successive times have the warring elements beaten upon this house, in the 126 years since it was built?

No one can say, but everyone can see the wonderful preservation of this house, through surface protection, despite all it has gone through in well over one hundred years.

If equally well protected, our modern houses should last as well. So will property of almost any kind—from a city garage to a country barn—from an office desk to a library table, or the metal trim of buildings, or your front hall floor.

Some surfaces may need one kind of surface protection, and some another, *but they all need surface protection.*

It is at the surface that trouble begins, rust that attacks iron—decay that attacks wood—wear that attacks surfaces subject to friction. All these allies of destruction hunt for an opening *at the surface.* Surface is the frontier—the point of attack.

It is when we once picture all the agents of property deterioration as an ever-ready enemy waiting to spring at any opening offered, that we appreciate the significance of the expression;

"SAVE THE SURFACE AND YOU SAVE ALL"

THIS ANNOUNCEMENT *is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:*

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"SAVE THE SURFACE AND YOU SAVE ALL" Paint & Varnish

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SHORT TIME TESTS OF COWS

Continued from page 25

percentage when the cows milking are increasing in live weight. On the whole, however, this is not a very important factor in the testing question so far as we know at present. It is one of those problems on which it is not an easy matter to obtain definite data. Cows vary considerably in the percentage of milk-fat from one season to another.

Some have claimed that drugs may be fed to increase the milk-flow and test of the milk. Practically all the Association's rules forbid the use of any drugs given to cows while under test, except as prescribed by a qualified veterinarian in case of sickness. Recent investigations have shown that there are no known galactagogues, or medicines which are able to cause an increase in the flow of milk as given by a cow.

The foregoing has been written in defence of the men who are spending their money on the testing of their cows—in some cases without results, as in cases where cows do not give sufficient milk-fat to qualify, or where a cow fails to exceed a previous record, or where cow or owner is taken ill and the test has to be abandoned. The expense for all such tests has to be borne by the owners and instead of discouraging them, we ought to encourage these men.

The writer is willing to admit, and has so stated publicly, that the longer the period covered by the test the more valuable is the test, but to condemn short-tests entirely, as is being done by some men occupying prominent positions in the dairy world, is to go against past experience of practical breeders, and is contradicted by prices paid in the auction ring, than which there is no better indication of values known to-day.

YIELDS AND EXPENDITURES

Continued from page 32

strengthens the crop and causes the grain or fruit to fill.

The practices we are speaking of, have shown their results in great national averages. Let us present only one, which is a comparison of the history of crop yields in Canada with those of Great Britain at two periods 20 years apart.

Increase in Yield in Farm Crops in 20 Years

Crop.	Period 1886-1895	Period 1906-1910
In Great Britain. Average Yield per Acre.		
	Bus.	Bus.
Wheat	31.2	33.1
Oats	43.6	44.3
Potatoes	166	210
In Canada.		
Wheat	13.1	14.9
Oats	28.2	28.3
Potatoes	123.3	119.4

This table shows that during this 20 year period the yields of Great Britain have materially increased. The records of the Nation also show that the use of fertilizers became more general and increased rapidly throughout this period in Great Britain. In Canada the average yields have just about stood still. In fact yields of potatoes have actually decreased. Within this period of 20 years the use of fertilizers has begun and made some progress—in Canada. Especially within the latter periods of the war the products of the Canadian fertilizer industry have been recognized as of essential importance to the average Canadian farm. Now, if under normal conditions in Great Britain the average yields increased as indicated, and at the same time records show that the use of fertilizers in Great Britain have increased similarly, it is obvious that the use of fertilizers has a direct bearing on the increase in yield of crops.

The final point of our statement is that crops can actually be fed and increased in their productiveness just the same as can the livestock on the farm be forced to produce more milk and more meat by judicious feeding. It is a safe prediction to make that the successful farmer of the next decade in Canada will be the man who studies the food supply in his soils, the characteristic food supply required by his various types of crops and the profitable and liberal use of this important crop increaser.

Danger of Lightning

By Laddie

THREE incidents in one summer induced the writer to look into the subject of lightning stroke.

They were as follows: First, in the State of Michigan, two men were putting a stone foundation under a frame building, containing furniture. A mother and three children were in the building. A thunderstorm came up, and to escape from the rain both men went under the building and were killed. It looked vindictive for the lightning to pass the house and its inhabitants and kill those men in the cellar. Second, a shrewd Southern editor this spring wrote: "A thunder-bolt never comes out of a clear sky." I commend the following to his notice. In August of the summer referred to, two boys were playing upon the commons of London, Ontario. There was not a cloud in the sky. Suddenly a terrific roar of thunder was heard accompanied by a blinding flash of lightning, and one of the boys was killed.

Third, taking tea one night with a friend, we noticed the sky was covered with flat clouds very high up. All at once a flash and a report blinded and terrified us, throwing down one of the children head-over-heels on the floor. We hastened outside to find nothing but a strong odor of ozone.

That night I determined to get to the bottom of the matter, and procured from London, England, a small school text-book, a translation of a book used in the schools of France, and written by Paul Bert, at that time Minister of Education. On two pages of that little manual I learned that the lightning which kills and destroys comes from the ground, not from the sky. I was immediately emancipated from all fear, for I saw plainly that the intention of lightning conductors was to lead the electric fluid from the ground, safely past the buildings, on to the air and into the clouds.

Thus was explained the three incidents recorded above. To be safe anywhere, one has only to place a non-conductor between oneself and the ground.

This can be done by going to bed; doing what our forefathers practised unwittingly, for feather beds and woollen blankets are non-conductors. Of course a lightning conductor properly insulated is the best protection, but wool, rubber or glass, placed between oneself and the ground, is always an easy and convenient protection.

There is a kind of thunderstorm which is perfectly harmless; it is known by rolling thunder. The dangerous sort is accompanied by short, sharp, pistol cracks of thunder, the result of the attempt of the electric fluid to use the air in its effort to reach the cloud.

When one is wakened at night, he should listen for the thunder; if it rolls go to sleep again, if it is sharp, keep awake and on no account get out of bed—you are safe there. There are some real facts and optical illusions which seem to contradict the theory advanced. I may return to them in another article. But one of the principal is, that lightning appears to come down. Marie Corelli in "The Soul of Lillith" says: "The last words were yet trembling on his lips when a fearful forked tongue of red flame escaped from the clouds, descending obliquely like a colossal sword. It smote the tower, splitting its arched roof, etc., etc.,"

As a matter of fact it goes up, but it has great difficulty in passing on to the air, which is a non-conductor, from any surface but a pointed one, and is liable to explode and strike downwards. A point of steel or iron will slip it gently on to the air without damage. Thus the great value of conductors. Nature has taught us this in the trees. All trees are more or less dangerous in a thunderstorm, because of their round or blunt tops. The Lombardy poplar is the exception, which is nature's true lightning conductor and a row of them one hundred feet from a house would be all the protection necessary.

Lubrication Very Important

Are you giving your Automobile, Stationary Engine, Tractor and other farm machines the proper lubrication attention? All of these must be correctly lubricated if they are to give you the kind and length of service that they should give.

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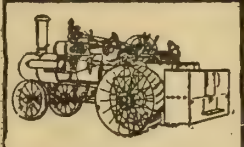

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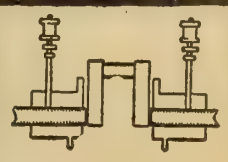

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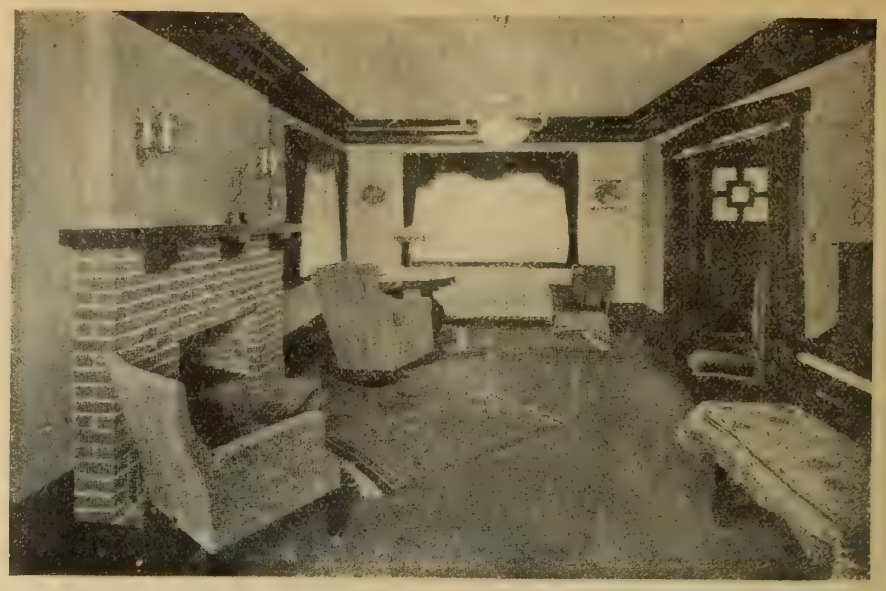
The Walls of Your House as a Background

By ETHYL MUNRO



A living room furnished for comfort and general livableness. Note the quiet walls, the wide fireplace and furniture made to be used.

WHEN we think of color as a means of expressing an idea—exhilaration, restfulness, warmth, coolness, irritation, we begin to see the wonderful possibilities of creating an atmosphere in our homes by a carefully thought out scheme of decoration.

Beginning with the primary colors, yellow, blue and red, and shading out to all their various tones and combinations, every color tone has a distinct "temperamental" quality of its own.

Yellow is, more than any other color, like the sun or artificial light, and just as light brings cheer into a darkened room, so yellow entering into any color scheme introduces a feeling of light, cheer, buoyancy and life. It is therefore especially good for poorly lighted rooms or rooms with a northern exposure. This does not mean that a perfectly full, intense, brilliant yellow should be used, but a color tone in which yellow is the dominating element. Buff, cream, lemon, ecru and even some shades of fawn come under this head, but beware of mustard shades. In paints and other finishes most colors go on darker and stronger than they appear in the sample, the exception being the light shades of fawn.

Blue is a non-aggressive color, usually cool and restful and varying in its different shades from the blue of the sky on the lake on a summer day to the cold blue of ice or the sky on a winter night. It is an excellent antidote to tone down the vivid yellows and reds, and may be used in combination with these, especially with yellow, for example a soft blue wall-paper with light oak woodwork. Such a combination as this, when it is good, is what artists call a harmony of contrast. In using blue for a bedroom it may verge on the "baby blues." For a living-room or dining-room look for soft or old blues or those with a shade of gray or green.

Red is a masterful color, suggesting either warmth or irritation. It also, because it seems to reach one's consciousness more quickly than blue, makes the walls appear nearer, or makes the room look smaller. The skilful use of red brings out a quality of warmth and hospitality especially desirable in a cold north room, but if you desire much red in a room use a gray or white, even a dull gold wall, and put the red in the rug, curtains, or furniture coverings. The same may be said of rose which is beautiful for draperies or coverings with gray or white walls, but too strong for a whole room.

Green is not only yellow and blue combined, but light and coolness, cheer and repose. It is a color both restful to the eyes and soothing to the nerves, and, as some of the modern soft tapestry papers show in their blur of gray-green foliage with touches of yellow, brown, blue, gold or pink, it can be used with a wide variety of colors. Red and green, however, are extremely difficult to use together.

Orange, a combination of red and yellow, is an extremely difficult color to live with, as it arouses all the qualities of light, heat, cheer, irritation and vitality, destroying anything restful unless it is well toned down by counter-balancing colors and used on small areas; its accessory hues run into bright browns, red buffs and many wood colors. In combining any of the bright, aggressive colors with the dull or neutral tones, it is well to remember that in a dull-colored room a few bright notes give character, but in a strongly colored room, a few dull notes would be lost.

Purple, a product of red and blue, cannot be said to express the combined qualities of these two colors. It has always been used with a mystic significance by the church and suggests mourning, shade and dignity. In Poe's poem, "The Raven," where the bird of ill-omen comes to haunt him with memories of Lenore, the repeated mention of "the curtain's violet lining with the lamplight gloating o'er" is not the least effective of the influences that go to create the general melancholy atmosphere of the room. Purple in its varying shades of violet, mauve, "London smoke," "elephant's breath," etc., is too depressing to be used extensively in home decoration. Its only place would be in draperies and coverings in a very formal parlor.

A color scheme doesn't mean having a room done entirely in one color, even in varying shades of one color—a decoration of this kind would be likely to be both monotonous and uninteresting, but a color scheme does require that the room shall be "keyed" to a certain color, any other colors that are introduced being subordinated to this keyed idea. The home decorator who can use the unexpected or accidental color idea at the right time and place can add infinitely to the charm and interest of a room. These accidental notes will be brought out best in little touches in furniture coverings, rugs, curtains or in wall paper borders.

Because the walls of a room make the background for furniture, pictures, even for people, they must be kept quiet in both color tone and pattern. It is a fundamental and final principle that "backgrounds must be less intense in color than objects which are to be effectively shown on them," and anyone knows the distracting effect of showy patterns. There are certain wall-paper designs and patterns too which are actually disturbing in themselves, I have in mind a paper in a bedroom showing on every square foot of wall space a little brown jungle of bulrushes, half-hiding the figure of a man pointing a gun. It was enough to quite spoil the sleep of a sensitive soul. More common and almost equally tiring are the large floral designs that might give the impression of bunches of roses being thrown at one from every direction. On a very fine quality of paper for a living-room or den I have seen the picture of a

smouldering grate with a red parrot perched above it and the whole half blurred with smoke fumes. The contrasting grey and red colors might have been used very well if say the walls had been gray with touches of red in hangings and coverings, but the whole picture repeated monotonously all over the walls was most distressing. The smoky fumes seemed to give the room a stuffy, suffocating air and there are times when no one wants to be surrounded by a few scores of parrots. It is a pretty safe rule that the less pattern we have on a wall the better, and where a pattern is used as in a border or panelling, the conventional designs are usually better than even a simple floral pattern. The tapestry papers where a mass of foliage is woven into a soft blur in delicate or rather neutral tints are, of course, exceptions to this rule.

Another law to be considered in a decorative scheme is to keep the darkest colors nearest the floor, working up to the lighter tones in the ceiling. This is natural and reasonable, since the sky is lighter than the faraway hills, and the hills lighter than the surrounding country farther below the horizon.

It is not enough, in decorating a home, to think of each room separately. The house should be thought of as a whole with regard to the vistas we may get from one room to another. It is not necessary to have all the wall papers match, or even be the same in tone, but all must be considered together. Either harmony or contrast may be attractive, but an unrelated treatment of rooms that naturally group themselves together is almost as jarring as if the two treatments were used in the one room. If a house is very small keep it as much in one tone as possible, even with one paper all over the lower floor. Variety can be had in different draperies and furniture.

To make your home your own, expressing your own individual idea of beauty and fitness, you must work out your own plan of decoration. Some combinations that may be used with an endless number of variations are: Soft brown walls, darker brown rug, buff or tan ceiling with touches of yellow and old blue in hangings and coverings; gray-green or bronze-green for a room of warm or cool exposure, with bits of mulberry or yellow in borders and hangings; gray walls with a warm red in curtains and rugs; blue-gray walls with silver and peacock blue and perhaps a little pale yellow in hangings and rugs; gray (or ivory for a bedroom) with old rose; soft Dutch blue or gray-blue walls with light oak woodwork, a treatment that is particularly good in a room with a buff brick fireplace. The new tapestry papers can be had in many combinations of color blurred together and softened by some neutral tone so that no one color intrudes, but that the whole is keyed to some shade of tan, ecru, fawn, soft blue, blue-gray, gray-green or one of the many shades of brown; and in these papers we always find some touch of brightening color—pink, rose, yellow, even peacock blue, or red, which gives a cue to introducing a live touch of color in hangings, rugs and furniture coverings.

Room Measurement Chart

The following table will show you how many single rolls of ordinary 18 in. wide paper you will require for side walls and ceilings. Deduct two single rolls of sidewall paper for every four ordinary size openings.

No. of ft. around the room.	Height of Ceiling. 8 ft. Rolls.	9 ft. Rolls	10 ft. Rolls	Yards of Border.	Rolls of Ceiling.
32	8	9	10	12	2
36	9	11	12	14	3
40	10	11	13	15	4
44	11	12	14	16	4
48	12	14	15	18	5
52	13	15	16	19	6
56	14	16	17	20	6
60	15	17	19	22	7
64	16	18	20	23	8
68	17	19	21	25	10
72	18	20	22	26	11
76	19	21	23	28	12
80	20	22	25	29	13
84	21	23	26	31	14
88	22	24	27	32	15
92	23	26	28	33	16
96	24	27	30	34	18
100	25	28	31	36	19
104	26	29	32	37	20
108	27	30	33	38	20

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Cut full size--long body and sleeves. Made of selected materials of best wearing qualities. A shirt for every need. Sold everywhere.
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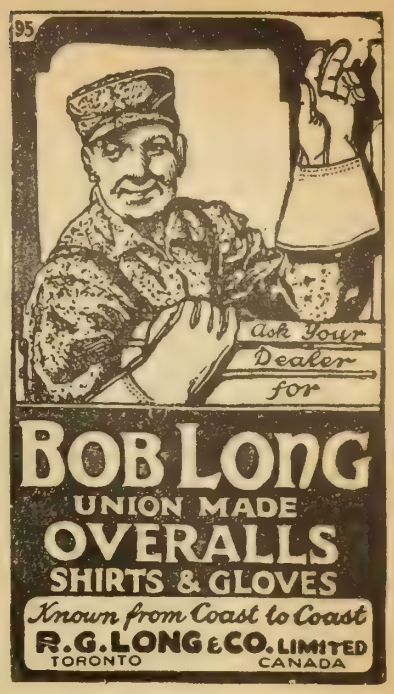
Belleville, Canada



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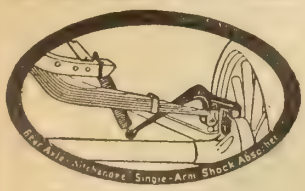

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RECIPES

Codfish Souffle

1 cup shredded codfish
2 cups mashed potato (hot or cold)
Yolks of 2 eggs
Whites of 2 eggs
2 tablespoons butter
Dash of pepper

Soak the fish in lukewarm water for ten minutes; drain and dry thoroughly; mix with the potato; add egg yolks which have been beaten very light and the butter and pepper. Beat well and fold in the whites of the eggs which have been beaten stiff and dry. Put in a greased baking dish and bake about twenty minutes in a moderate oven. A few slices of onion may be chopped and cooked in the butter and added to the potato and fish.

Macedoin of Vegetables

This dish is especially good for variety late in the season when the vegetables are losing flavor a little. Cut carrots and turnips into cubes or fancy shapes and cook separately in boiling salted water until soft. Use about two cups carrots and one cup turnips. Drain and add canned peas; about one cup will be sufficient for the average-sized dish. Reheat with a little butter, salt and pepper, or with a cream sauce. The combination of flavors is most palatable.

Moulded Salmon

1 can salmon
½ tablespoon salt
1½ tablespoons sugar
½ tablespoon flour
1 teaspoon mustard
Few grains cayenne
Yolks of 2 eggs
1½ tablespoons melted butter
¾ cup milk
¼ cup vinegar
¾ tablespoon granulated gelatine
2 tablespoons cold water

Mix salt, sugar, mustard, flour and pepper; add the slightly beaten egg yolks, butter, milk and vinegar. Cook over boiling water, stirring constantly until the mixture thickens. Add gelatine soaked in cold water. Strain and add to salmon. Fill individual moulds, chill and serve.

Graham Pudding

¼ cup butter
½ cup molasses
1 egg
½ cup sweet milk
1½ cups Graham flour
½ teaspoon baking-powder
1 teaspoon soda
½ teaspoon salt
1 cup raisins, seeded

Melt butter, add egg well beaten, the molasses and milk. Mix and sift the dry ingredients and add them to the liquid mixture. Pour into a well-buttered one-quart mould or individual moulds, but do not have the moulds over two-thirds full, and steam. If sour milk is available omit the baking-powder and add an extra one-quarter teaspoonful of soda.

Raisin Drop Cakes

3 tablespoons shortening
½ cup brown sugar
1 egg well beaten
2 tablespoons milk
1 cup flour
2 teaspoons baking-powder
1 teaspoon cinnamon
½ cup raisins seeded and chopped

Cream the shortening and sugar; add egg and milk and beat well; add flour, baking-powder and cinnamon sifted together; add raisins. Beat well, drop from a teaspoon two inches apart on a greased baking sheet and bake in a moderate oven about twelve minutes.

Bran Drop Cookies

1 cup bran
½ cup flour
¼ teaspoon salt
¼ teaspoon soda
½ teaspoon cinnamon
¼ teaspoon cloves
¼ cup molasses
¼ cup sugar
¼ cup melted shortening
¼ cup milk

Mix in order given, drop from tablespoon, two inches apart, on greased pan, and bake in a hot oven twelve minutes.

Sponge Cake

Break 3 eggs into a bowl and beat one minute. Add 1½ cups white sugar and beat five minutes. Add 1 cup flour and beat one minute more. Add ½ cup water and another cup flour sifted with 2 teaspoons baking-powder. Flavor with lemon or vanilla and salt. Beat well and bake twenty-five or thirty minutes in a moderate oven.

ONE WOMAN'S PIN MONEY

By Lottie M. Dreman

IN the Farmers' Magazine of April first, Mrs. Kerr wrote on "The Farm Wife's Income." It is true that very often men do not understand why women like pretty clothes, but I find that this plan generally works out pretty well.

Hubby puts in flour and meat and I generally have about six cows and fifty hens. This more than pays for the food and then when the children's clothes are bought there are a few dollars left—though not many—for a few extras, that is a nice dish for the buffet or curtains for the parlor and for a few aprons and house dresses. But where are the pretty clothes coming from?

When a new calf or pig or lamb, or maybe twins are born, I go out and say to hubby: "Oh: what a dear little thing! If I attend to that calf, (or whatever it is) and feed it, can I have it?"

Supposing it is a calf, I raise it for a cow and double my money on it. I sell the new calf and there is my money for my clothes, and I have my cow to the good. You can do the same with pigs or any other animal. Sometimes there will be a little runt of a pig. You are almost sure to get it because most men hate to see one in a pen; and you can raise it with a sucking bottle to be a fine pig. Then again turkeys pay wonderfully well, and they are not very hard to attend to. Don't keep them shut in much and if you think they are laying away watch them and follow them to their nests, but don't disturb them.

Another way is to get your husband to give you a patch of ground all your own. I have dug it up with a spade and put manure on it with the wheel-barrow and worked it down with the rake. Then put in your garden stuff. Radishes and onions pay wonderfully well to sell for early summer bunch stuff. Potatoes pay well too. We had one luck to just put them in a trench about four inches deep with manure right in the bottom of it and drop the potatoes right on top of the manure and then cover it over again, putting the potatoes about six inches apart. I have tried all of these plans and have found them successful.

SUN FOR HONEY

By Mark Meredith

SOME people declare that bees can't stand heat, and so place the hives under the shade of trees. This is a mistake—a very great mistake. Hives stand out in the full blaze of the sun in semi-tropical countries, and certainly neither bees nor honey are any the worse.

Bees look after the temperature of their hives themselves. When the hive gets too warm for the workers they come to the entrance and begin fanning with their wings, blowing in fresh air.

If the hives are placed in the centre of an open space in a garden it is sometimes found that there is a regular line of bees flying just about the height of a person's face, and in this case stings may result. This nuisance is easily avoided if the hives are placed near to a hedge. Bees always fly as straight as they can to and from the flowers from which they are gathering honey. We have the well-known expression a "bee-line" for indicating the shortest possible cut between two points.

So the bees, on leaving the hive, will rise at once above the hedge, and so fly at a height at which they are not likely to trouble anybody.

Prune Jelly

½ Lb. Prunes
1 Cupful Water
Rind of Half a Lemon Grated
1 Inch of Cinnamon Stick
¼ Cupful Sugar
1½ Tablespoonful Gelatin
1 Cupful Fruit Juice
Shredded Almonds
Chopped Nut-meats

WASH the prunes, cover them with water and allow to soak for thirty minutes; then put them both into a saucepan, add the grated lemon rind, the cinnamon stick, and the sugar. Cook until tender, strain off the liquid, and rub the prunes through a sieve. Crack a few of the stones, blanch the kernels, and add them to the pulp. Put the liquid from the prunes into a pan, add the gelatin, and the fruit juice and dissolve over the fire. Strain this into the pulp and stir occasionally until nearly cold. Rinse out a jelly mold with cold water and decorate with shredded almonds; fill up with the prune jelly, and set aside in a cool place until firm. Decorate with a few chopped nut-meats.

Pictorial Review

Whenever a recipe calls for "Gelatine"—it means

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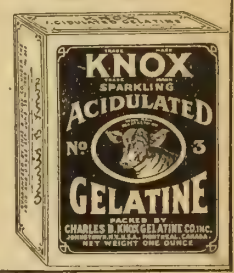

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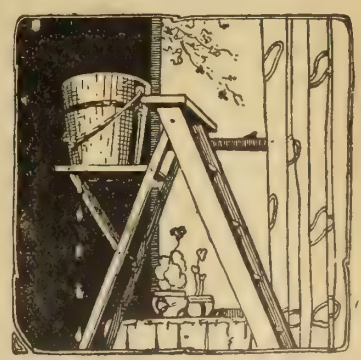
Leaky tubs and pails are an exasperation and a nuisance. Abolish them! Free your household from this annoyance.



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cannot leak, because they are made in one piece, without joint or seam. They are tough and impervious to liquids, yet so light and resilient that they never become battered or dented. They keep the water hot a long time, because they do not conduct heat as metal does, yet they are easy to lift and easy to carry. They cost less than metal, too, and last longer for they are less liable to accidents, and rust will not attack them.

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Perhaps you don't realize how helpfully Fairy Soap deals with tender complexions.

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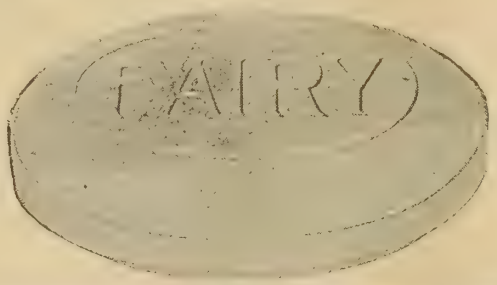

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9458—Ladies' Dress
Sizes 34, 36, 38, 40, 42, 44 inches bust measure.

9495 Ladies' Coat
9482 Ladies' Skirt

9471 Ladies' Dress

9498—Ladies' Dress
Sizes 34, 36, 38, 40, 42 inches bust measure.

9477—Ladies' Dress
Sizes 34, 36, 38, 40, 42 inches bust measure.

9497—Juniors' and Girls' Coat
Sizes, 8, 10, 12, 14 Years.

9469—Juniors' and Girls' Dress
Sizes 8, 10, 12, 14 Years.

9485—Ladies' Dress
Sizes 34, 36, 38, 40, 42, 44 inches bust measure.

9473—Little Girls' Coat
Sizes 2, 4, 6, 8 Years

9484—Ladies' Dress
Sizes 34, 36, 38, 40, 42 inches bust measure.

9490—Suit for Misses and Small Women
Sizes 16, 18, 20 Years.

9480—Dress for Misses and Small Women
Sizes 16, 18, 20 Years.

LIEUT.-COL. J. OBED SMITH IN ENGLAND

ONE of the best known and most popular figures in Canadian circles in London is Lieut.-Col. J. Obed Smith, Commissioner for Emigration for the Dominion Government. Says *The Beaver*, published by the Khaki University:

Col. Smith, or "J.O.," as he is to his familiars, is one of the best types of civil servants. He is suave, gracious, disinterested, and a slave to duty. His motto is the same as that of the Prince of Wales, "I serve." A guide, philosopher and friend to every intending emigrant, he takes as much pains to give correct information of the right sort to a domestic servant or a farm laborer, as he does to supply a business man or a financial magnate with the "latest figures."

Col. Smith has been through the mill. He knows by actual experience all the conditions, as well as the hardships, which make for or mar success. He went out to Canada as a youth in 1881, and until he got his feet firmly rooted did "any old thing," and "every old thing," as so many other notable Canadians have done.

Ten years later he was a barrister of the Manitoba Courts. He was for a time accountant of the Legislative Assembly for that Province, afterward becoming Chief Clerk in the Railway Department, and later right-of-way solicitor. As Deputy Railway Commissioner, Deputy Provincial and Commissioner, and Deputy Attorney-General, he served an apprenticeship which gave him an exceptional insight into the affairs of the province.

In 1901 he entered the Dominion public service as Commissioner for Immigration at Winnipeg, and during his term of office 800,000 settlers—more that twice as many as the Canadian army—were established in the West.

In 1908 Col. Smith was made assistant superintendent of emigration for Great Britain and Ireland, and for the continent of Europe, with his office in London. Up to the outbreak of war no less than 1,250,000 settlers have, under his direction and jurisdiction, crossed the Atlantic to found homes on the broad and fertile land of Canada's fair domain.

During the war he has been special representative of the Western Canadian Press Association, and besides contributing articles to London magazines, was never able, from lack of time, to meet the demand by Western Canadian and American newspapers for articles on the war.

He is an advertising and publicity expert whose reputation in Fleet Street is established. He is also a Fellow of the Royal Geographical Society, Society of Arts, etc., and sits on the Strand Division bench as Justice of the Peace for the County of London. He is a Life Governor of three hospitals. In Masonic circles he is well-known as a founder and treasurer of Canada Lodge, and represents over here several Grand Lodges in Canada, while he is also a member of the Grand Lodge of England.

With a comprehensive experience in moving large bodies of men and women it is no wonder that during the war the Government instinctively turned towards Lieut.-Col. Smith, when the question of repatriating soldiers' dependent families became acute. It is largely owing to Col. Smith's knowledge, good judgment and sound sense that the arrangements made have been so successful, and it is particularly gratifying to know that nearly 22,000 women and children were booked to Canada during the most serious period of the submarine menace, without the loss of a single life.

GUARDS AGAINST MISSING ISSUE

Bell Rapids, Ont.

The label does not show when my subscription runs out, but I believe it is in April. I am enclosing $1.50 to renew the same. I am well satisfied with your paper, its ideals are high and to my mind that's a big thing in its favor. Wishing you success,

I remain,
John Rohlig.

Stockings That Cost Less Because They Wear Longer

YOUR boy *is* hard on stockings. Any normal, healthy boy is You can't keep him from climbing trees and fences. But you *can* get him stockings that will stand this usage—that will give him *extra* wear and look well too. Just ask your dealer for Buster Brown Stockings.

Buster Brown Stockings wear longer because we knit them from extra-long yarn with double-ply legs and three-ply heels and toes. We make sure of Buster Brown quality by spinning our own yarn. Our employees have had years of training, for special skill is necessary to knit Buster Brown Stockings.

You'll find them well-fitting and smoothly finished, for we knit good looks as well as durability into Buster Brown hosiery. They look well at all times.

Sold everywhere. Ask your dealer for Buster Brown durable hosiery.

The Chipman-Holton Knitting Co., Limited

Hamilton, Ont.—Mills also at Welland

The BUSTER BROWN STOCKING

SUNSHINE HOSIERY REGISTERED

DAYTON AIRLESS -TIRES-

Can't Puncture
Can't Blow Out

Piers of live, elastic rubber built about one inch apart inside the casing and vulcanized or welded to it take the place of an inner tube. Nothing can happen but wear.

30x3 and 30x3½ sizes only—Ford Sizes. More than 50,000 cars equipped with them in 6 years.

Big Money in becoming our exclusive dealer in your county. Tire experience unnecessary. Write today for terms.

Dept F.M. The Dayton Rubber Mfg. Co. Dayton, O.

A Vast New Land Waiting for You

Settle in NORTHERN ONTARIO

Opportunity awaits the man who will strike out to the rich, fertile land of Northern Ontario. Millions of acres of virgin soil obtainable at 50c an acre in some districts, and in others Free, are calling for cultivation. This land contains immense resources in timber, mineral, waterpower, fish, game and scenery, and is one of the greatest expanses of fertile territory in the world. This land calls for men to cultivate it; in return it will give health, comfort and prosperity. Thousands of farmers have responded to the call. How about you?

For full information as to terms, regulations and settlers' rates, write to

H. A. MACDONELL, - Director of Colonization

G. H. FERGUSON
Minister of Lands, Forests and Mines

Parliament Buildings
TORONTO, ONT.

Ford Announcement

Electric Starting and Lighting System

—Consisting of *Generator, Starting Motor* and *Storage Battery.*

—An electric system made for Ford cars by the Ford Motor Company of Canada in their own factory; built into the Ford motor which has been re-designed for the purpose.

—Controlled from a complete instrument board on the cowl.

Standard Equipment on Sedans and Coupes

All closed models now have electric starting and lighting system as Standard Equipment.

Ford Sedan $1175 Ford Coupe $975
(Including Ford Starter and Lighting System)
Prices are f. o. b. Ford, Ont., and are subject to War Tax.

Ford Closed Models will, for a time, take the entire production of Starting and Lighting Systems.

By June 1st, however, Ford Touring Cars and Roadsters will be supplied with Starting and Lighting as *Optional Equipment,* at an extra charge.

Samples now at all Ford Branches.

FORD MOTOR COMPANY
OF CANADA, LIMITED
FORD, ONTARIO

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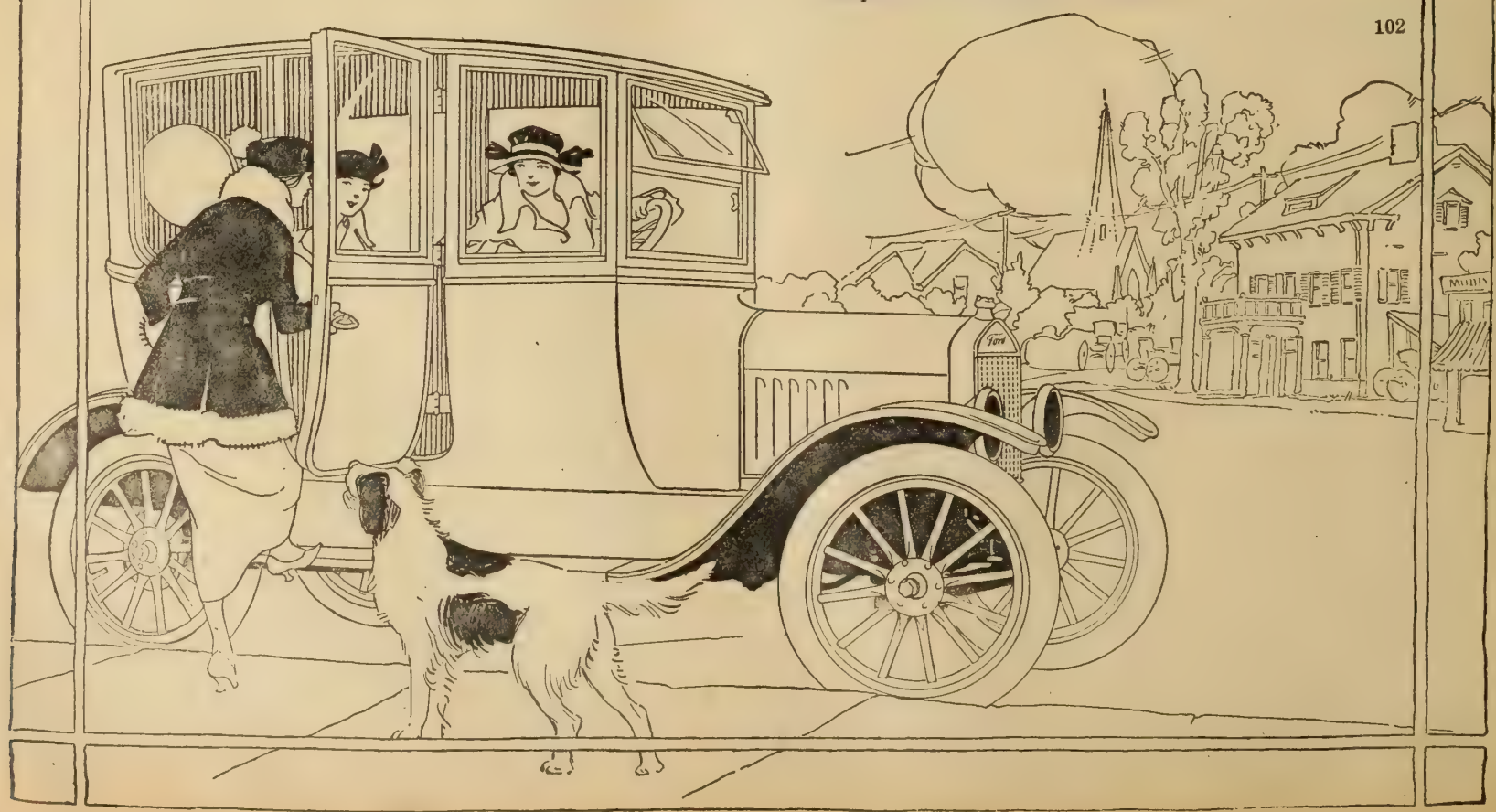

Nitrate of Soda
Increases Crops

A luxuriant growth, the result of using Nitrate of Soda. Compare this with No. 1 where no Nitrate of Soda was applied.—Idaho Experimental Station.

No Soil Is Inexhaustible. If sold off the farm, every load of hay, every bale of straw, every bushel of grain, every bag of potatoes, every barrel of apples, every crate of berries, every basket of onions, every hog or sheep or cow or horse, every chicken or duck or turkey, every dozen of eggs, every quart of milk deprives your soil of some of its fertility.

This must be replaced by Fertilizers in some form to restore fertility

There was no Nitrate of Soda used on this crop. The stalks are weak and the yield is much less.—Idaho Experimental Station.

Nitrate of Soda is a refined product extracted from the surface crust of the rainless deserts of Chili in South America. Hundreds of thousands of tons of it have been used annually in British and European agriculture for a long period and this fact explains in a large measure the remarkably high yields attained on their century-old soils.

In Canada and the United States its use increases at a rapid rate. Farmers, fruit growers and gardeners are adopting the practice of the Old Country more and more yearly.

Nitrate of Soda furnishes Nitrogen—that most expensive element of Fertilizers—in its most available form. It far surpasses tankage, blood meal, feed cake refuse and such nitrogen-bearing fertilizers in this respect, and also in its economy. It is recognized as the Nitrogen plant food *par excellence.*

Try a Spring Tonic for Your Crops: You have seen small patches of luxuriant growth in pastures due to the manure or urine of the cattle—This is the work of Nitrogen.

You have seen the house plants of some flower-loving Homemaker grow and thrive from the judicious use of manure-water—This is the work of Nitrogen also.

Some Advantages
and Uses of Nitrate of Soda

It stimulates the rapid growth and early maturity of most garden crops.

It makes plants resistant. Plants made strong by vigorous early growth can better resist drought, attacks of insects and plant diseases.

It increases yields of special crops. It is of great importance in the production of sugar beets, fibre plants, fodder crops and tobacco.

It improves pastures and meadows. Applied as a top-dressing it increases the growth of the grasses and clovers greatly.

Sometimes crops are checked in their spring growth owing to the delayed action of the soil bacteria. The Nitrate keeps the plants growing until the soil is stirred into full life.

It provides the highest-priced ingredient of complete fertilizers. Phosphoric Acid and Potash which are required by plants as well as Nitrogen, are not so costly as the Nitrogen nor are they so often lacking in our soils as is Nitrogen

It forms basis of fertilizer mixtures. It is estimated that ready-made fertilizers cost from 25 to 35 per cent more than home-made mixtures. The scientific agriculturist will buy his supplies of Nitrate of Soda, Acid-Phosphate and Potash separately and make such mixtures as he knows his soils and crops require.

Nitrate of Soda supplies Nitrogen to plants even more readily than does manure. Backward pastures are stimulated into vigorous growth. Struggling fall wheat or spring crops are forced to grow; they do not have to wait for the bacteria to unlock the stores of plant foods held in the soil. Trees in the orchards attain a richer leafage. Vegetables in the garden shoot ahead. Lawns are made greener and richer.

Use Nitrate of Soda as a Spring Plant Food

The element of plant food first exhausted in soils is Nitrogen and in many cases a marked increase in crops is obtained by top-dressings of Nitrate alone. However, the skilful farmer will use it with Phosphoric Acid and Potash as the condition of the soil and the necessity of the crop indicates.

A comprehensive report on "Nitrate of Soda, its nature and use in agriculture," has been prepared by the Dominion Department and appeared in last week's edition of this publication. It has been prepared by Frank T. Shutt, M.A.D.Sc., Dominion Chemist, and B. Leslie Emslie, F.C.S., Supervisor of Investigational Work with Fertilizers. Write to-day for a copy of this report. It shows the value of purchasing fertilizers in pure form.

Price and Instructions for Ordering. The Nitrate of Soda is stored in Ontario at Brighton, Cobourg, Trenton, Nobel and Sulphide. The Price is $82.00 per net ton in carload lots, f.o.b. cars at shipping point. The Board reserves the option of selecting the shipping point.

In less than car lots the price will be $9.00 per bag weighing approximately 200 lbs. each, f.o.b. shipping point. Minimum shipment five bags.

All orders must be sent to Imperial Munitions Board, 56 Church St., Toronto, and each order must be accompanied by a marked cheque or money order for full amount of the purchase. Cheques and money orders should be made out in favor of Imperial Munitions Board, and must be payable at par in Toronto. In ordering please give full shipping directions including your Post Office address, name of railway and of your nearest railway station. All shipments will be made promptly. Freight charges will be collected on delivery.

Imperial Munitions Board, 56 Church St., Toronto, Ont.

Pull Together!

Man's Work Again—for Canada in good old Peabodys

ASK Bill what he was doing a year ago: Building pontoon-bridges, chasing the fleeing Boche across the rivers he had held three years, straight into Hunland. You KNOW what Bill is doing TODAY: He is building real bridges for peace-time GROWTH, the commerce, the prosperity, the new happiness and content of Canada. And it's a man's job. The same boys whom we outfitted with fighting-clothes are back on the Job now Fighting the Bigger Better Battle of Peace in good old Peabodys. Peabody Overalls and Peabody Gloves, worn wherever there's a big job being done by real men.

So, Pull with Bill, Everybody --- in good, old, honest Peabodys.

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FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto.

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VOL. XII, No. 10 MAY 15, 1919 $1.50 Per Year 10 Cents Per Copy

Metal Roof and Sides Saved This Barn *Wooden Barns are Easy Prey for Fires.*

Ontario Barn Fires
$91,000 a month

836 barns were burned in Ontario during 1918. The buildings destroyed were valued at $677,096. The contents at $416,835. The total loss was $1,093,931. A gigantic sum to go up in smoke in twelve short months!

The average loss for each barn fire was $1,307—not to mention the loss of time in putting up a new barn, or the inconvenience resulting from doing without a barn during the period of erecting the new one.

These figures are taken from the latest Ontario Fire Marshal's Report, recently issued. They provide food for thought among the farmers of Canada, because other provinces, as well as Ontario, suffered from fires.

The Report tells how to prevent fires on the farm and elsewhere. One section dealing with barn fires says:—

"It is an easy matter for you to put your farm barn in what might reasonably be called perfect physical condition as regards fire hazards if it is well built, on good foundations, metal or other non-inflammable roof." . . .

"If near a railroad the buildings should be covered with metal or other non-inflammable roofing." . . . *(Address, Fire Marshal's Office, Parliament Buildings, Toronto, for complete report.)*

A farmer in Waterloo county recently suffered a $10,000 fire loss on a barn near a railroad. Part of this big barn was covered with metal and the remainder with wooden shingles. Sparks from a passing train falling on the roof ignited the wooden shingles. A small additional sum spent to cover the whole roof with metal would have prevented this ten thousand dollar feast for the flames!

The Government, the Ontario Fire Marshal and the Ontario Fire Prevention League, recognize the superiority of metal roofs as a preventive of fire. Many Fire Insurance Companies recognize the fire-proofing value of metal, and allow a lower insurance rate for buildings roofed with it.

In a fire a farmer might lose a herd of high-grade animals that took years and years of careful selection and breeding to build up. No money could replace such a herd, which would be not only a loss to the farmer, but to the stock-breeding industry of Canada.

And with every fire there is always the chance of the loss of human lives—infinitely more precious than money.

While the first cost of a roof of metal shingles or sheets is more than one of wooden shingles, the final cost is less on account of the greater number of years of service. In roofing a building, no matter whether covered with wooden shingles, composition roofing, or slate, galvanized iron is always used for the valleys, gutters, and leaders, which are the portions that must stand the greatest wear.

Why not use metal for all the roof and for the sides of the building, too?

Metal is the most durable roofing material, as well as fire-proof and lightning-proof. If metal roofing were fifty per cent. higher in price than it is today, it would still be the most economical material for your roof. Instances are numerous where metal roofs have given thirty years and more of splendid service.

Catalogues and information will be supplied by any of the firms whose names appear below.

Not "Tin"

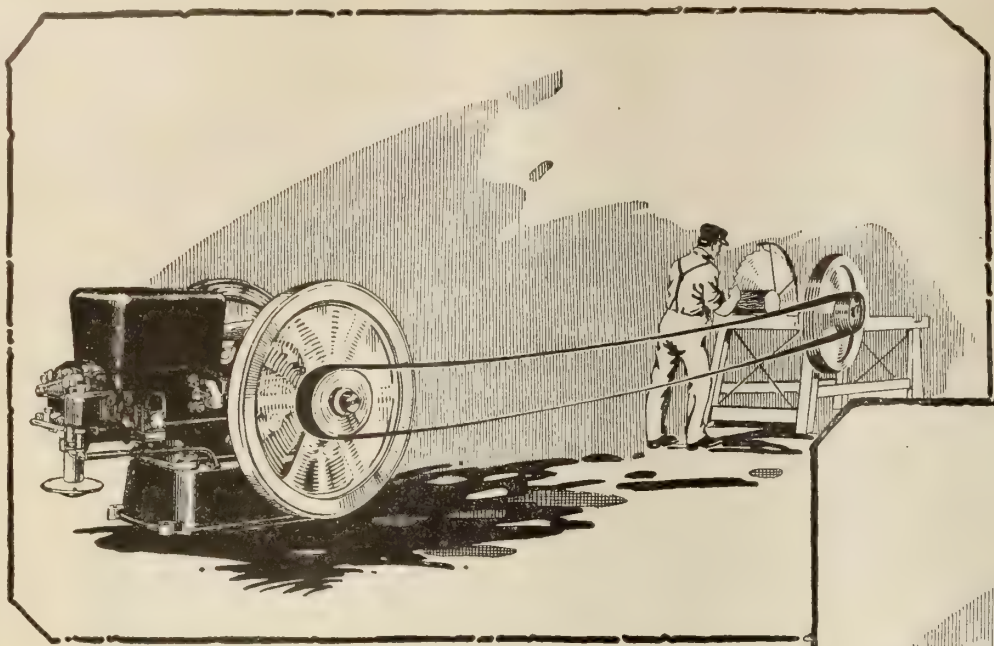
Metal roofing, as manufactured by the firms mentioned below, is not made of light, thinly coated "tin" plate such as is used for tin cans, etc. The metal is strong, durable STEEL thickly galvanized. To call a galvanized steel roof a "tin" roof is like calling a steel armored battle-ship a "tin" boat.

A great percentage of the raw materials in galvanized STEEL roofing is mined, smelted, rolled and coated in Canada, and the various processes of manufacturing it provides work for Canadian labor.

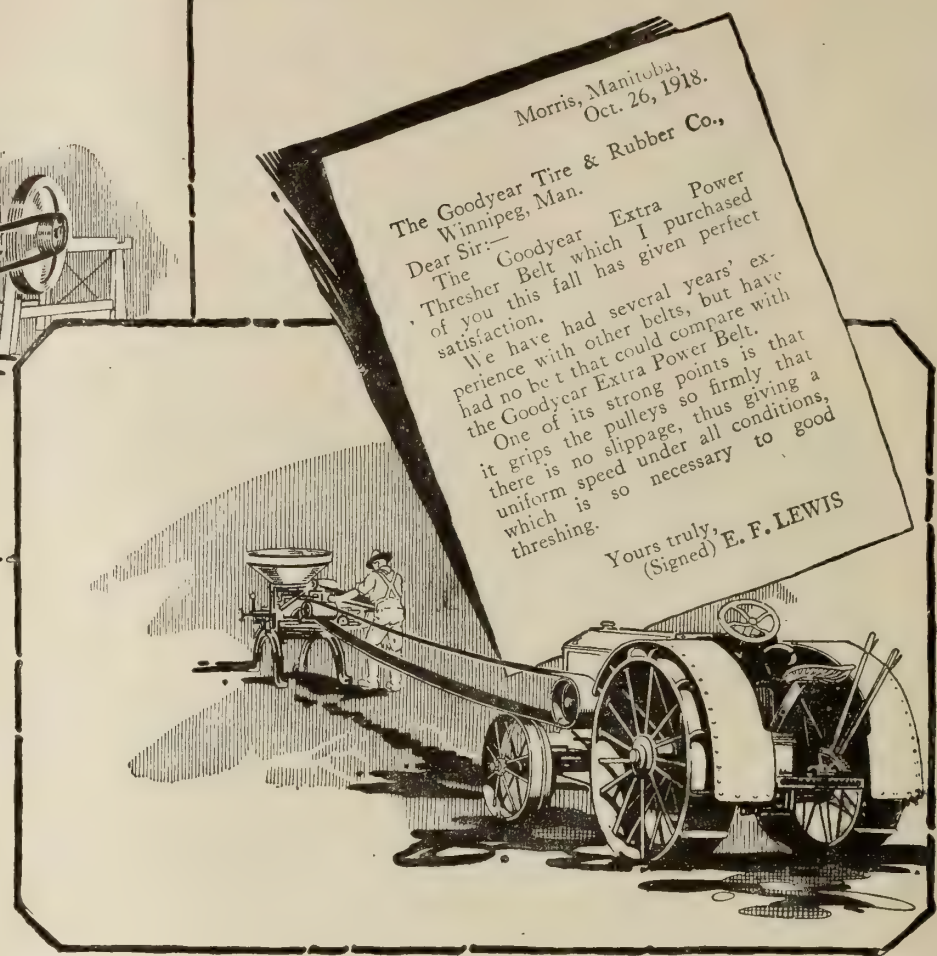
By purchasing goods made in Canada, you are helping to solve the present labor problem, and provide work for the returned soldiers.

The Pedlar People, Limited, Oshawa & Montreal; The Metallic Roofing Co., Limited; Toronto & Winnipeg; The Metal Shingle & Siding Co., Limited, Preston & Montreal; The Galt Art Metal Co., Limited, Galt, Ontario; The McFarlane-Douglas Co., Limited, Ottawa and Montreal

Roof with Metal
for safety and permanence



The qualities that make Goodyear Extra Power a better belt for threshing make it better for all farm service.



Only the Wealthy Farmer can afford a Cheap Belt —

You can't afford to take chances on belting at any time. To-day, you should be particularly careful. There are two reasons.

In the first place, all belting is higher in price. Both labor and materials that go into a belt cost more. The difference between the price of a good belt and a poor one doesn't show the difference in quality to-day as clearly as it used to do.

Goodyear Extra Power Belting is about the highest-priced Belting ever offered to the farmer. But it's the only belting a thrifty farmer CAN AFFORD to buy.

The cotton in Extra Power Belting is protected — properly protected. Rubber—and good rubber, too—is forced through and through the specially woven fabric. The seams are sealed with rubber. The plies are welded tight with rubber. The whole belt is coated with a "friction surface" of rubber to give it gripping power AND TO PROTECT IT.

We could skimp on the rubber we use in this belt—and so make it as cheap as ordinary belts. But we don't do it. For thorough protection with good rubber means a lot to you. Your belt has to stand all kinds of weather—rain, sun, snow. It has to stand rough treatment. The little extra price you pay for the good rubber that protects Extra Power is belt INSURANCE. It means longer life and better service. It means SAVING money in the end.

Here's the second reason for being over-careful in buying belting. You want to save time and labor these days—because both mean big money to-day. That's why you use machinery isn't it? A poor belt will mean loss of all that you save. You haven't the time to be tinkering with a poor belt. You can't afford to "get along with" a belt that slips, that wastes fuel.

In Extra Power you get belting that big industries use—that has been tested on all kinds of drives—from lumber mills to munition plants. You get a modern belt—a belt that's always uniform in quality—a belt you KNOW you can depend on. You get a belt that hugs the pulleys and carries power. You get a belt built of cotton and rubber—a flexible belt. You get a belt that's WORTH every cent you pay for it—because it gives longer wear.

Next time you buy a belt, pay a little more and get "Extra Power." Demand it by name. Your implement or hardware dealer has it or can get it for you.

If you have trouble securing genuine Goodyear Extra Power Belting, send your order to us and we will fill it.

The Goodyear Tire & Rubber Co. of Canada, Limited

Toronto

GOODYEAR
MADE IN CANADA

EXTRA POWER BELTING

Gillette
Safety Razor

The Shaving Service for Every Man ---Everywhere

A Gillette Safety Razor costs $5.00; saves you ten minutes a day; and makes shaving a very genuine pleasure.

Your automobile would cost you at least a hundred times five dollars. Could it save you 16¾ hours a day, or give you a hundred times the pleasure of a Gillette shave?

You will agree, then, with the city man who regards his Gillette as a very sound and solid investment. Buy one today.

NO STROPPING ---NO HONING

The KIT SET
for Motorists

So compact, so complete is this new set that many motorists always carry it with them in the vest pocket. The Kit Set is the Pocket Edition Gillette in a soft-roll, black leather case, with 12 double-edged Gillette Blades and a mirror.

It is just exactly what the motorist requires!

$5.00 the Set

The Gillette Safety Razor Co. of Canada, Limited

Office and Factory: 65-73 St. Alexander St., Montreal

Get This

LOUDEN

Bird-Proof

Barn Door

Hanger

and have the barn door hang and run right for all time. This is positively the finest Barn Door Hanger on the market. As its name implies, birds cannot build in the track. The track is hollow with closed ends. No ice or snow in winter or trash in summer can possibly get in to clog it. Runs on two strongly braced roller bearing trolley wheels, always smooth and easy running. Hinged so as to make it flexible and to allow the door to swing outwards and upwards if occasion requires.

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If your Hardware man will not supply you, we will direct; mention his name, width of your door. Over 50 years of experience and practical experiments go to make Louden goods efficient and reliable. We make

"EVERYTHING FOR THE BARN"

including Cow Stalls, Stanchions, Litter and Feed Carriers, Hay Forks and Slings.

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are promptly relieved with inexpensive home treatment. It absolutely removes the pain, swelling, tiredness and disease. Full particulars on receipt of stamp.

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FARMERS' MAGAZINE

Canada's National Farm Magazine

JOSEPH MCGOEY, *Manager* F. M. CHAPMAN, *Managing Editor*
ETHEL M. CHAPMAN, *Associate Editor*

An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.—Lloyd George.

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Entered as second-class matter July 1, 1912, at the Post Office at Buffalo, under the Act of March 3rd, 1879. Entered as second-class matter at the Post Office Department, Ottawa.

EMPIRE Teat Cups Are Easily Applied

A BOY or girl can apply Empire Teat Cups as easily as a man. The instant they are slipped over the teats, they are on for keeps until you shut off the vacuum. They never drop off—they can't, for the vacuum is *always uniform.* The Empire Super-Simple Pulsator, used on all

EMPIRE MILKING MACHINES

has no piston. Pistons wear and leak vacuum. This permits teat cups to drop off. There is no possible chance for leakage of vacuum with the Empire. It's always uniform. Cows like this uniform action of teat cups—it soothes them. They let their milk down in larger quantities and lactation period is lengthened also.

The Empire is the recognized standard among milking machines. Buy no milking machine until you get our Catalog No. 16 Read it first. Ask for name of nearest dealer. See the Empire. Then decide.

The Empire Cream Separator Co.
of Canada, Limited
146 CRAIG STREET WEST
MONTREAL
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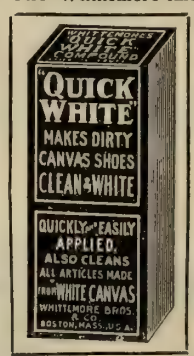
The Shine That Lasts

The Whittemore line serves a double purpose, viz., that of a polish and leather preservative.



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NOBBY BROWN PASTE POLISH

for brown shoes and

PEERLESS OXBLOOD PASTE for red shoes.
QUICK WHITE Liquid Canvas Dressing.
ALBO White Cake Canvas Dressing.
GILT EDGE SELF SHINING Dressing.

Your shoes will hold their shine a surprisingly long time if you use

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Ask your dealer. If he cannot supply you, write us.

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BOSTON, MASS., U. S. A.

Made in Canada

Ideal Fence

Freight-Paid Prices

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Our Guarantee:

IDEAL FENCE is guaranteed to be exactly as represented. If you are not satisfied with "IDEAL," send it back at our expense, and we will return your money. This guarantee covers everything—no conditions, no loopholes.

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Freight paid to your nearest railway station (except electric) on all orders of $15 or over. Remit by Bank Draft, Post Office Order or Express Order.

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Made throughout of Full Gauge No. 9 evenly Galvanized Hard Steel Wire. Carried in stock in 20, 30 and 40-rod rolls.

No. 4330 4 line wires, 33 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 11, 11, 11. Per Rod..... **30c.**

No. 5400 5 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 10,10, 10, 10. Per Rod..... **37½c.**

No. 6300 6 line wires, 30 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod..... **42c.**

No. 6400 6 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 9. Per Rod..... **43c.**

No. 7400 7 line wires, 40 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6, 6, 7, 7½, 8½. Per Rod..... **49c.**

No. 7480 7 line wires, 48 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 5, 6½, 7½, 9, 10, 10. Per Rod..... **51c.**

No. 8420 8 line wires, 42 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6 , 6, 6, 6, 6, 6, 6. Per Rod..... **56c.**

No. 842 8 line wires, 42 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6. Per Rod..... **61c.**

No. 8470 8 line wires, 47 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **58c.**

No. 847 8 line wires, 47 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8, 8, 9. Per Rod..... **63c.**

No. 935 9 line wires, 35 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 5, 5, 6, 6. Per Rod..... **70c.**

No. 948 9 line wires, 48 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 6, 6, 6, 6, 6, 6, 6, 6. Per Rod..... **69c.**

No. 9481 9 line wires, 48 inches high, uprights 13 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **77c.**

No. 9500 9 line wires, 50 inches high, uprights 22 inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **63c.**

No. 950 9 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 8, 8, 8. Per Rod..... **69c.**

No. 1050 10 line wires, 50 inches high, uprights 16½ inches apart. All No. 9 Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3½, 4½, 5½, 6½, 8, 8, 8. Per Rod..... **75c.**

MEDIUM HEAVY "IDEAL" FENCE

Made throughout of Hard Steel Wire, evenly Galvanized. Carried in stock in 20, 30 and 40-rod rolls.

No. 630 6 line wires, 30 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 5, 6, 7, 8. Per Rod..... **30c.**

No. 641 6 line wires, 41 inches high, uprights 16½ inches apart. All Hard Steel Wire, evenly galvanized. Spacing 7, 7, 8, 9, 10. Per Rod..... **31c.**

No. 6410 Same as Style No. 641 with uprights 22 inches apart. Per Rod..... **29c.**

No. 726 7 line wires, 26 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4½, 5, 6. Per Rod..... **34c.**

No. 7261 Same as Style No. 726, but with uprights 8 inches apart. Per Rod..... **40c.**

No. 7266 Same as Style No. 726, but with uprights 6 inches apart. Per Rod..... **45c.**

No. 834 8 line wires, 34 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3½, 4, 4, 5, 6½, 8. Per Rod..... **42c.**

No. 936 9 line wires, 36 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized Spacing 3, 3½, 4, 4½, 4½, 5, 5½, 6. Per Rod..... **43c.**

No. 949 9 line wires, 49 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 4, 4, 5, 6, 7, 7, 8, 8. Per Rod..... **48c.**

No. 1150 11 line wires, 50 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 3, 3, 3, 4, 4, 5, 6, 7, 7, 8. Per Rod..... **54c.**

No. 1448 14 line wires, 48 inches high, uprights 13 inches apart. All Hard Steel Wire, evenly galvanized. Spacing 2½, 2½, 2½, 2½, 2½, 3, 3½, 4, 5, 5½, 5½, 6. Per Rod..... **64c.**

"IDEAL" Poultry Fence

Top and bottom wires No. 9, all others No. 13. Carried in stock in 10 and 20-rod rolls.

No. 1848 18 bar, 48 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5. Per Rod..... **80c.**

No. 2060 20 bar, 60 inches high, cross-bars 8 inches apart. All Hard Steel Wire, evenly galvanized. Spacing, from bottom up, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 1⅞, 2¼, 2¼, 2¾, 2¾, 3, 3, 3½, 3½, 4, 4½, 5, 6, 6. Per Rod..... **88c.**

"IDEAL" Lawn Fence and Lawn Gates

Write for Price List and Catalogue.

Improved "IDEAL" Farm Gates

Horizontal wires all No. 9, only 6 inches apart. Uprights No. 12 wire, 6 inches apart. Diagonals No. 13, furnish a strong, close mesh chicken-proof and pig-proof. New patented brace tightener and latch—the biggest gate improvements in years.

Length, feet	Height, inches	Price
3	36	$3.15
3	42	3.30
3	48	3.40
3½	36	3.30
3½	42	3.40
3½	48	3.75
4	48	4.00
10	36	6.75
10	42	7.00
10	48	7.25
12	42	7.25
12	48	7.75
13	48	8.00
14	48	8.25
16	48	8.75

Improved "IDEAL" Stock Gates

Wire filling No. 9 throughout, same as Heavy "IDEAL" Fence. No fence filling used. Each wire put in by hand.

Carried in stock in following sizes only:

12 feet long, 51 inches high, each..... $7.25
13 feet long, 51 inches high, each..... 7.50
14 feet long, 51 inches high, each..... 7.75

Fence Supplies, Brace Wire and Barb Wire

Ideal Steel Posts, 1½ x 1½ x 7' long..... $0.55
Ideal Fence Stretcher, each..... 9.00
Hand Stretcher, each..... .75
Universal Post Hole Digger, each..... 2.75
Galv. Staples in 25-lb. boxes..... 1.75
Galv. Staples in 100-lb. boxes..... 6.75
No. 9 Brace Wire, per 25 lbs..... 1.50
No. 9 Coiled Spring Wire, per 100 lbs..... 5.75

Barb Wire

4-pt. 4" Galv. Cabled, per 100 lbs..... $6.00
4-pt. 6" Galv. Cabled, per 80-rod spool..... 5.10
2-pt. 5" Galv. Cabled, per 80-rod spool..... 4.85

N.B.—Prices quoted above apply to Old Ontario only, stations south of North Bay. Freight-paid prices to points in New Ontario and elsewhere quoted on application.

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1150 McDougall Street - WINDSOR, ONTARIO

(Formerly The McGregor-Banwell Fence Co., Limited, Walkerville, Ont.)

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When money is in a Savings Account in The Merchants Bank, it is absolutely safe from loss, as far as you are concerned. All the time it is here, it is earning interest —so that the bank actually pays you to let it take care of your money. Don't carry unneeded sums on your person or hide them at home. Protect them against loss, theft and fire by opening a savings account.

8

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Head Office: Montreal. Established 1864.

With its 119 Branches in Ontario, 37 Branches in Quebec, 1 Branch in New Brunswick, 2 Branches in Nova Scotia, 27 Branches in Manitoba, 41 Branches in Saskatchewan, 69 Branches in Alberta and 8 Branches in British Columbia serves Rural Canada most effectively.

WRITE OR CALL AT NEAREST BRANCH.

Build your home with

MILTON BRICK

It will last for generations and retain the same high class appearance

We have a splendid assortment to select from. Including Red and Buff Pressed Brick in many shades, and our Artistic "Rug Brick"

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Head Office, Toronto

He Had A Young Family---

but not enough insurance. His boy and girl had to go to work at fourteen. An Excelsior Policy will educate your children.

Excelsior Life Insurance Co.

Write to-day for specimen policy and literature

Investments & Insurance
For the Farmer

Is It Fair?

Public Ownership of City Real Estate---By W. D. ALBRIGHT

I OWN half a section of land. A neighbor ten miles distant owns a like area. We are anticipating—and working for—a railroad through our part of the country. No one knows where it will go. Suppose it builds through my farm, plants a station thereon and thereby establishes the nucleus of a town. I may be able to sell my land in lots for around five hundred dollars per acre and have a depot at my door, so to speak. My neighbor, who has been in the country longer than I have and has done really more to build it up to a point where railroad construction is justified, would be ten miles from the station and his land worth perhaps twenty-five dollars per acre. I should be able to get established on the ground floor of the business of the town, live in luxury and spend the winters in California, if I chose. My neighbor would have to plug ahead under divers handicaps and drive to town over roads which his blood-sweated taxes have had to build and maintain. Is it fair?

Our town grows into a city. The lots I sold for seventy-five dollars apiece multiply rapidly in value and change hands repeatedly at ever-advancing figures. Conveyancers take toll of every transfer. Speculators fatten on the profits of successive sales. Thousands upon thousands of dollars are spent in surveying and advertising subdivisions, which are often held out of productive use, actual producers being crowded farther and farther from the centres of population. When I came West in 1913, it seemed to me that Winnipeg subdivisions extended about sixty miles out on to the prairie and that about half of Saskatchewan was staked into city lots. The village of Athabasca Landing was surveyed out into the muskeg morass five miles east of the town. Think of the expense of this kind of thing. Think of the billions upon billions of dollars locked up in city real estate, upon which it is hoped some day to earn interest. Think of the army of parasites fattening upon this kind of pseudo business. Who pays the piper? The workers of the world, the farmers, the laborers and business men, the true producers of wealth. Who profits? The pet children of fortune, the sharks, and the drones. Is it fair?

Time passes. A certain corner on a certain street becomes the coveted centre of business. The bank or railway office or the retail store which can secure premises on that corner or near it finds itself possessed of a distinct advantage over its competitor not so favorably located. Part of the advantage is economic, part of it due to sentiment and popular whim, but that matters not. From a business standpoint, situation is vital. So the real estate in that enviable location climbs into values represented by hundreds, then thousands, then tens of thousands and hundreds of thousands of dollars per foot. The patrons of that business must pay the rent. Who earns it? The producers of the city and the surrounding country who patronize the town. Who profits? The landlord. Is it fair?

Unearned increment is a phrase familiar to every economist. The expression is misleading. There is actually no such thing as "unearned increment." Somebody earns it. What we mean is that it is not earned by those who get the benefits of it. The producers of the world prepare the ground and sow the seed. The landlord reaps the harvest. Is it fair?

Henry George scanned a world in which each decade of progress made the rich richer and the poor relatively poorer. He glimpsed the bearing of the monstrous principle of unearned increment, so-called, and sought a remedy in single tax, i.e. taxation of land values only, as distinct from improvements. This was to force idle land into use. It was to tax opportunity and thereby compel the possessors of city real estate to use it for productive purposes in order to meet the taxation. He wrote a volume in support of his theory and various progressive Western cities have sought to apply it. Edmonton adopted it with qualifications, yet the city on the Saskatchewan has not escaped the toils

Continued on page 47

INSURANCE

LIFE INSURANCE AS AN INVESTMENT

By W. A Craick

ONE of the most unfortunate mistakes which a man can make in his attitude towards life insurance is to regard the purchase of a policy as an expense. If viewed in this light, it is a natural consequence that he should hold down the amount of his insurance to a minimum or fight shy of insurance altogether.

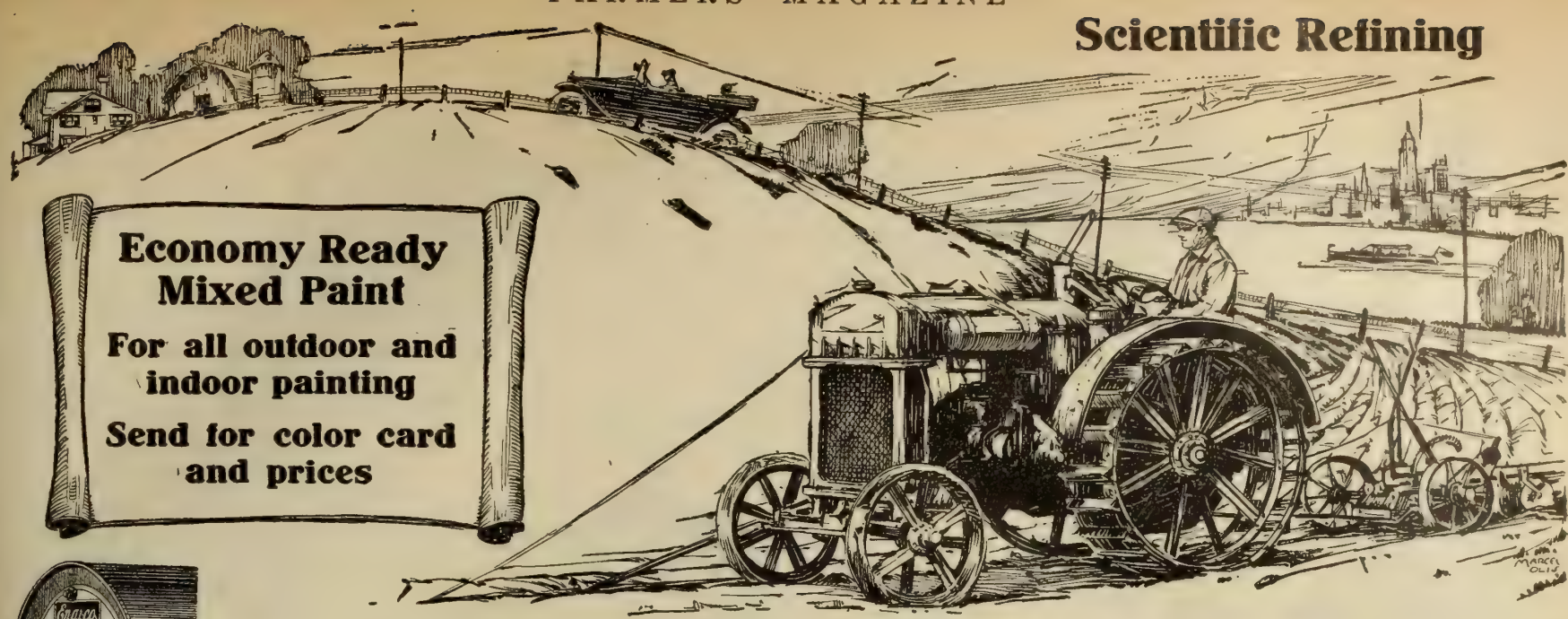
But insurance is not an expense, at least not in the same sense as food, clothing or rent are expenses, and the idea that it is should be shaken from the mind. Insurance is really an investment and one of the most desirable investments that can be conceived. No one would regard the money set aside each month for the purchase of a Victory Bond as an expense. Why then should the annual contribution towards the purchase of a paid-up insurance policy be classed as one?

The difference between an investment and an expense is that in the case of an investment, provided it is a first-class one, one's money comes back, while in the case of an expense, it is gone for good. Judged by this standard, there can be no question as to the proper place of the insurance policy. Not only does the money come back, but in the case of the death of the assured, it may come back in such increased amount as to make even a successful stock market operator exclaim with astonishment.

Get clear away from the notion that an insurance premium is an expense! It is the seed that will grow into a fruitful tree if it is permitted, in the hands of the insurance company, to be properly cultivated. Persistent saving through the medium of modern life insurance is an instrument that will accumulate capital over a period of time and that will eventually be the safeguard and support of declining years.

Of course there are other desirable forms of investment to be had. It is a fine thing for a farmer to own his property outright. It is gratifying to have an accumulation of stocks and bonds from which sufficient income is derivable to afford one the enjoyment of some of the good things of life. But all these types of investment overlook one most important consideration, the frailty of the thread that binds the human being to life. Only one kind of investment exists that takes this serious contingency into account and that is life insurance. To buy land, mortgages, stocks or bonds, without at the same time securing protection against death's interference with one's program of saving, is to be either supremely selfish or else extremely short-sighted.

Scientific Refining



The Proven Lubricant

Studious research in the first place, then rigid tests, and finally scientific distillation based on the tests resulted in the production of En-ar-co, a lubricant free from residue and coke-like substance.

Popular experience has corroborated the results of our tests: En-ar-co has been found by the public to be the satisfactory motor oil. Just as our other products for 40 years have given satisfaction.

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For Maximum Power

En-ar-co lubrication helps to make possible the production of your motor's greatest power. Hence it is the lubrication you want, for power is what you sought in buying your automobile or tractor.

And other En-ar-co products that make for power and efficiency are as eminently satisfactory. White Rose Gasoline for greater power. National Light Oil for Tractor fuel, also best for lamps, oil stoves and incubators.

En-ar-co Motor Grease for every lubrication point on tractor or auto. Black Beauty Axle Grease for wagons.

Buy En-ar-co National Motor Oil the Economical Way

50 gal. wood barrels — 50 gal. steel drums
30 gal. wood half barrels — 30 gal. steel half drums

Buy of your local dealer if he has En-ar-co Products in stock; if he cannot supply you, mail us your order direct.

Tell your dealer you want to try En-ar-co National Motor Oil and other products bearing the En-ar-co label.

Sent FREE

Canadian Oil Companies, Limited, 1313 Excelsior Life Bldg., Toronto, Ont.

I own..... (Give name above) automobile or tractor and enclose two 3-cent stamps. Send me Handy Oil Can FREE. Please give nearest shipping point in this province and quote prices on the items I have marked. I will be in the market about

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I use.....gals. gasoline per year — I use.....auto grease per year
I use.....gals. motor oil per year — I use.....gals. kerosene per year
I use.....lbs. axle grease per year — I use.....gals. tractor oil per year

My Name is.....
Address.....
Postoffice..... Province.....

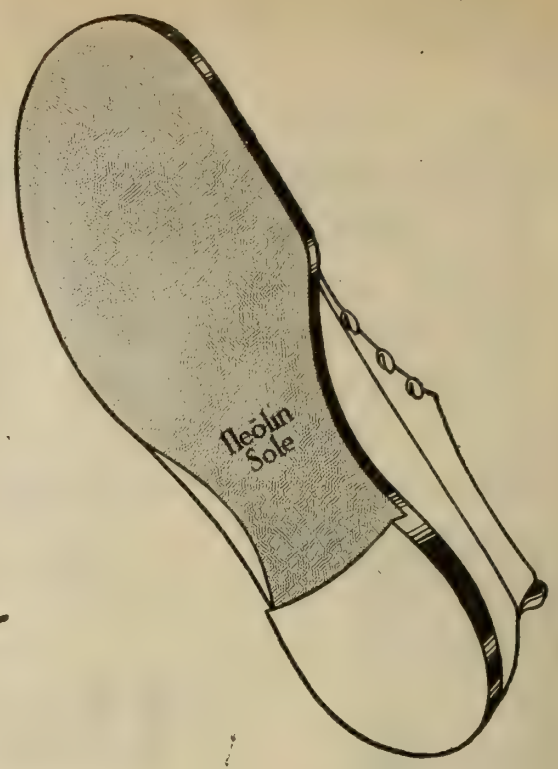
Tear or Cut Out—Mail Today

139) NOTE: This can will not be sent unless you give make of your auto or tractor.

Canadian Oil Companies, Limited

1313 Excelsior Life Building Toronto, Ontario

Neōlin Soles



Peace-Time Production On Neōlin Soles

IF you have been deprived of the comfort and economy of Neōlin Soles, you will welcome the tremendously increased production of our factory.

War's urgent needs prevented us from securing additional heavy steel machinery. But now all bars are down. Steel has been available. Equipment has been multiplied. Production is on a peace-time basis. Shoe manufacturers can be supplied with all the Neōlin Soles they need. Shoe merchants can show you all kinds of shoes with Neōlin Soles. Every pair of shoes you buy or get repaired now can be Neōlin-Soled.

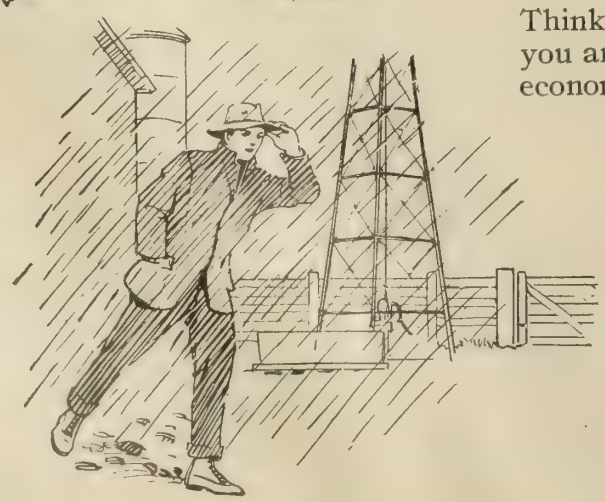
Think what this means to you and your family in shoe economy, in comfort, in style.

Neōlin Soles are flexible—even on sturdy, everyday shoes: they are long-wearing and waterproof.

Now you can have damp-proof shoes that are still light in weight and comfortable. On your Sunday shoes or on shoes for heavy work, around the farm have Neōlin Soles. Get them for the children and suggest to your wife that she try them.

Neōlin Soles — half-soles and full soles—are nailed or sewn on all kinds of shoes by manufacturers, repairmen, and at home.

Neōlin Soles have been a great success. So they have imitators. But the methods and materials that make Neōlin Soles superior are known only to Goodyear. You can be sure of Neōlin Sole quality only when you see the trademark "Neōlin" on the bottom of the sole.



The Goodyear Tire & Rubber Co. of Canada, Limited

This price ticket will mark for you the store where shoes with Neōlin Soles are in stock.

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Vol. XII. MAY 15, 1919 No. 10

Motor Car is Bettering Agriculture

Farmers are Buying Cars Because They Pay in Real Money Plus Convenience

By PHILIP TALBOT

"YES, but it would have cost me a good deal more to have done without it!"

The speaker was a farmer near London, Ont. A neighbor had been quizzing him regarding his car and had urged that the average farmer was not in a financial position to support such a piece of farm equipment, suggesting the cost. To this argument the foregoing reply was made.

"How do you make that out?" followed up the interviewer.

"It's just this way," continued the car owner. "We live about four miles from the station where we deliver our cream. It used to take us about an hour and a half to get the cream to the station. We can do that bit of work now in about half an hour. We live about ten miles from the city market. It used to take us the greater part of a day to make this trip. Further, one of the men of the farm was needed to look after the horses when we marketed. Now my sister can take the produce and do the buying. She used to come home of a market day tired and headachy from the long, tiresome drive. Now the marketing is more of a recreation than anything else."

Indeed, the farm automobile is no longer a farm luxury but has won a place among the farm necessities. Especially is this the case when the busy farm season is on. Here is one case in point: It was five-thirty one busy August day when an essential part of the separator of a threshing outfit went altogether out of commission. The local agent had not the part required in his shop. The only thing to do was to get into communication with the head office. To wait for the delivery of the needed part involved a wait of at least two days, if the Express Company were to be looked to. Only those who know the urgency of such a case understand what loss might have accrued through a delay so tedious. The auto saved the situation. The agent made the trip by night and the machine was running next morning by seven o'clock. Only those living in a wheat producing region realize the saving effected by this one auto trip alone.

The Representative's car ready to start out with a load of School Fair material.

Every community has its story to tell of what the car has done in the way of business, for many farmers are finding the auto truck a valuable aid in their work. There is the matter of delivering fat hogs and other valuable animals for an instance. With live hogs selling considerably above the twenty dollar mark, a farmer finds that he cannot afford to lose any of his stock. Yet in the days when delivery was by the slow horse wagon process, it was not an unusual thing for such losses to take place when the weather was extremely warm. Fatted animals, in splendid condition when they left the stable, were all too frequently below par when obliged to take a long walk to their destination. The auto truck prevents all such losses.

The Auto Truck Is Coming Fast

Further, the truck farmer, when he delivered his goods by wagon, usually required a whole day for the delivery of his goods. When he was obliged to leave home before daylight, his trip involved all the inconvenience of travelling either by lantern light or in darkness. Anyone who has done this sort of marketing understands why boys conclude that a man must be mighty fond of living who will keep his life in at such a cost. Now note the difference the auto truck makes. The gardener saves at least an hour's sleep. He makes his trip with comfort to himself. There are no horses to get ready or to hitch up. All his time when at market is devoted to business and his truck takes him to places he wishes to visit, without sign of weariness. The trip home is made rapidly, saving at least a half day in time. Best of all, when he comes home he is fresh for work, while old Dobbin and Dexter are fed and rested and readier even than their driver to do a fine half-day's stunt.

The saving in time is by no means the least considerable advantage the truck affords the farmer. Years are added to the life of his horses, for rapid roading is much harder on farm horses than ordinary farm duties. Better still, his own usefulness on the farm is extended far

Cars parked near Niagara River on a Wentworth County farmers' excursion.

A Peel County junior farmers' excursion visiting the O. A. College.

A Wentworth County farmers' excursion visiting the Rittenhouse School.

more than he realizes. Sitting hunched up on a wagon is one of the most tiresome processes in the world, while coming home from market tired and sleepy is anything but a good preparation for lively work or for bright thinking or entertaining or inspiring companionship.

Socially, the auto is a mighty force in country life. When a good day's work has been done on the farm there is something recreating about taking a trip to see a neighbor or to attend an entertainment or to visit some scene that distance would make impossible under ordinary conditions. Such trips need not be of daily occurrence nor of weekly occurrence, for that matter. But the *very fact that one feels that he may go if he cares to is a great thing in itself.*

Take the matter of church attendance for another instance. The days are gone when the old-fashioned democrat appeared at the front steps of the country church. That fine conveyance was superseded by the one-horse buggy, facetiously called the "four-wheeled compendium of happiness." Unfortunately the buggy was designed to carry but two and the rest of the family stayed at home. The difficulty of transportation rendered church buildings as numerous as school houses. This meant the weak church and a failing cause. For one thing the old people were almost obliged to stay at home.

The auto *car is correcting all this. Now the whole family can attend church.* It is one thing of a hot morning to ride for an hour over hot, dusty roads to church, but quite another thing to spin from home in fifteen minutes. Only those who have tried both appreciate the difference. Where a little commonsense is used the auto is one of the means of aiding the country church tremendously. People like to go to church as well as ever they did, but the multiplicity of farm duties has made the long ride to church a barrier that is higher than most people realize.

Really Builds Country Business

Not the least of the services rendered country life by the auto car, is its good offices in building up the country store. Indeed, the od-fashioned country store has long since vanished or lingers only in places where the new wine has not reached. The modern country store depends quite as much on its delivery service as on its direct business in the store. The district is laid out in routes that are visited weekly. A special part of the store provided with counter and telephone, is set apart for this special branch of the work. Orders are solicited or received by telephone, and arrangements are made for delivery. Before the grocer leaves his store he knows what produce there is to collect and what goods are required. He knows his route to the minute and his customers know that they may depend upon his coming as punctually as the express.

Farmers appreciate such a service as this and are willing to pay for it. Time is money to them, particularly during the busy season and this season is the grocer's slackest time. It pays the grocer to do this work, but it saves the farmer more than appears at first sight. The grocer who knows his business can sell to better advantage than the farmer, while the farmer gets a good market price, at the same time saving golden minutes in which he may pursue the nimble dollar. It hardly pays the farmer to go to market with a small lot of produce, while the accumulated produce soon makes up a good load for the grocer.

The old method of doing this work with a rickety wagon and jaded horses was all very good in its day, but the modern grocer is not living in the middle of the nineteenth century but in the twentieth. Communities that have tried this method of doing business have prospered in schools and churches as well as in business life. It means a healthy community spirit. It keeps money circulating locally and in a score of ways helps out in the things that make for prosperity. The grocer obliges by doing the farmer's business for him and in this way saves the farmer from running many an errand.

Caring For Our Farm Machinery

By HARRIS K. ADAMS

WITH the coming of power machinery to our farms, in the shape of bigger implements, tractors, trucks and automobiles, there is an increased responsibility on the farmer in the matter of the proper care of this new equipment, if he is to save money in upkeep and in capital expenditures for new ones.

It is frequently said that no farmer should handle machinery who has no mechanical genius. Certainly the law of personal attention holds good here as in all other things. For those machines that happen to fall to the lot of the farmer with a bent for mechanics always do more things and last longer than they do with indifferent farmers who see no difference between a field and a machine shed as a storage place. There are, also, so many little kinks about all machines that admit of improvement for convenience' sake, that the visitor to the tidy farm is often struck with the way machinery has been adapted to local needs.

Yet anxious as some farmers may be to take all care of their machines, many fall down because they do not know how to take that care. To such men we can offer no better advice than reading carefully the instruction books issued by the manufacturer. Too often these books are lost, or disfigured so that they are of no help. They should be kept in the farm office where they can be consulted just as the novice with his first Ford car reads carefully the instruction book until he becomes familiar with the whole of his tin Lizzie.

As a help in this caring for power machines, the following notes are given:

Care of Grease Cups in Tractors

Hard oil is used in bearings where the pressure is too great for thin oils and in other places where only a small amount of oil is needed. In any event, even though the grease cup is simple, it must be given some real attention. A very common mistake is made in filling by not squeezing the grease down in the top of the cup. When the cup is not properly filled, the first few turns down do not force the grease into the bearings but simply compact it in the grease cup. Because of this fact a man may think he has done his part and greased the bearings when he really hasn't.

Screw the top down until the bearing is well filled or until it can be plainly seen that the grease is oozing out at both ends of the bearing.

The can containing your supply of grease should not be allowed to stand open so that dust can get into it. Dust is gritty and if carried into the bearings with the grease will cut the bearings rapidly and often cause them to heat excessively.

On big farms where power machinery is used, a machine shop is essential

When filling the grease cups it is important to wipe the dust from the cup and especially out of the threads on the cup before filling. Dust accumulates on the cup and in the threads, and when the top is unscrewed this dust is carried up to the edge. When grease is put in, the dust gets in with it and bad results are very likely to follow.

See that all oil holes, oil or grease passages, are open and that the oil or grease actually reaches the bearings. Frequent inspection and cleaning of all oil holes, oil and grease passages, may save a bearing from being seriously damaged. It often happens that the oil passages get clogged right at the bearing so it is best to completely clean the oil passage all the way to the shaft.

Several parts of certain tractors operate in an oil bath. Because of the very nature of this system of oiling it is sometimes neglected. A man may think that because he has supplied a certain amount of oil at a certain time that the bearings are properly lubricated. It is always best to inspect these parts frequently and be sure that they are supplied with a sufficient amount of oil. By doing this you take no chances. Too much oil is not as harmful as too little oil. At any rate, oil is cheaper and better than delays and repair parts.

The first rule to remember in taking the mud stains off a car is that they should be taken off at the first possible moment after the mud has fastened itself upon the car. Every minute of delay means so much more difficulty and so much more likelihood of a permanent spot. The reason for this is that the mud will fasten itself very securely to the finishing coat of the car as it dries. When it becomes thoroughly dry and the mud is removed it simply takes the varnish along with it and leaves an unprotected spot of color on the surface. Very often this spot will not show for a short time, but as soon as it is exposed to a little wear or hard weather it will become quickly visible.

Water is the only cure for hard mud, but water must ever be used judiciously or it will be of as much harm as good. The garden hose is called into use by the suburbanite in cleaning the car. On this hose there is a nozzle which is adjustable to throw anything from a spray down to a thin, hard stream that has force enough to carry it twenty or thirty feet. This nozzle should be arranged to allow the water to come forth in a gentle stream so that when it strikes the body it only has a flowing or washing action without the suggestion of impact.

This will dissolve the mud, removing it grain by grain. When the hard stream strikes the side of the body it knocks the dirt against it, also leaving marks of grit which cut into the surface. Furthermore, it does not have the washing effect, but tears the spots of mud off by force, with the result that the finish is taken off with it.

After the car has been thoroughly washed, it is ready to be wiped off and dried. But, never as the finish of the car is valued, attempt to wipe the car unless you know that all the dirt has been removed. Examine the surfaces of most cars, and what do you find? Hundreds of lines or minute scratches. Have the car clean before it is rubbed dry.

Road tar is about the most damaging thing there is on the road for car surfaces. It is doubtful if there is anything that will take it off without taking the varnish along with it after it has once become dry and hard. In fact, it becomes as hard as flint and forms an actual part of the surface so that very often to remove it from the car that is to be repainted it has to be chipped off. Gasoline will dissolve tar, but it will also destroy the varnish coats and the same with other preparations.

Continued on page 42

The visitor to a farm is often struck with the adaptations to local needs.

MARCH *of the* FARM MOTOR TRUCK

Labor Needs and Livestock Business Demand It

By ELUID KESTER

Carrying sheepskins to market.

The fruitgrower finds the truck a big friend.

FOR some months large creameries, private and co-operative concerns alike, have been using motor trucks to collect the milk from the farm houses. Egg shippers have been taking up the idea in territory where the roads would permit. Rural freighting or express service under the auspices and encouragement of the U.S. Bureau of Markets, Department of Agriculture, has been established in producing territory that has not previously been adequately served. Their Post Office Department's motor trucks, laden with parcel post, have been going into the back country remote from the railroads—and doing it, moreover, day after day, even in the face of such weather as we had during the winter of 1917-18.

Canadians have already been made familiar with the value of trucks on country roads from seeing moving vans of tremendous size carrying household goods from town to town. Where better roads obtain, the importance of the truck as a farm possibility is growing fast.

What is Done, the Farmer Can Do

The daily object lessons can scarcely fail to impress the most conservative farmer who is fortunate enough to notice a motor truck making regular trips in his own township. But for all that this has had its effect, we have to look elsewhere for the big inspiration for rural adoption of motor trucks. Farmers are turning to motor trucks because the motor truck is a necessary complement of any full-fledged scheme of power farming and power farming is on the way.

Power farming means, in effect, the motorization of every agricultural operation from preparation of the soil to harvesting. Doubtless the acceptance of power farming was coming anyway, but labor conditions of the past few years have speeded it up tremendously. From the day that the farmers began to lose to the army, and to well-paid industry, the farm help that had been dribbling away even in previous years, it dawned upon all far-sighted members of the craft that there was nothing for it but to go the limit in the adoption of time and labor-saving machinery.

Farmers accept the fact that this shortage of human brawn on the farm is not a temporary wartime embarrassment. They have reconciled themselves to the fact that a good many of the young men who deserted the farms are not going to return very promptly, if at all. The farming reserves and the Boy Scouts and other volunteers that helped in the war pinch are not to be counted upon regularly. In short, there is nothing for it but the farmer must work out his own salvation with the only succor at hand, the versatile internal combustion engine. Once the tiller of the soil has been led to tractorize, the addition of a truck or trucks follows as an instinctive sequel.

Labor Needs Drive Farmers To It

Oddly enough the very spirit of unrest which it is admitted in all well-informed quarters now exists quite generally among the farmers is calculated to play into the hands of the men who sell and repair or operate motor trucks. For years the agricultural producers have regarded with steadily growing resentment the margins of profit taken by the middlemen. This discontent has increased visibly during the war period due to the "spread" between wholesale and retail prices. It finds expression in all manner of plans and projects for marketing farm produce direct to ultimate consumers in the cities and towns. Whatever the form taken by these efforts in direct distribution of *farm-to-table* service, so called, it is patent that success is dependent upon the provision of ample motor truck resources, preferably trucks owned or controlled by the farmers themselves.

The farmer within reach by motor truck of the large city where better prices obtain for livestock, grain, etc., needs little persuasion, as a rule, to be converted to the motor truck idea. Likewise the truck farmer and the poultryman who occupy stands on a city market. However, there are general farmers who, if the considerations of independence or self-sufficiency do not weigh with them, will find it economical to have their hauling done by a custom truck. For that matter though, there is and probably always will be much custom work in the tractor field.

One of the explanations of the sweep that the motor truck has made into popular favor in agricultural America is found in the circumstance that all over this country development of rail facilities for short hauls has not kept pace with the development of crop-producing districts. The motor truck with its range of action so much surpassing that of the horse and wagon has appeared on the farmer's horizon just in the nick of time. How wholeheartedly the up-to-date farmer is taking to the idea of the motor truck is not better attested than by the fact that the truck demand in farming territory is by no means confined to the ¾-ton and 1-ton capacities to which dealers expected that it would be restricted. There is a constant call, all the while growing louder, for trucks of 1½-and even of 5-ton capacity.

Over 78,000 motor trucks were in use on farms in the U.S. last year.

How the Middle West is Farming

Down in Iowa, the big farming state of the Union across the lines, the development of motor truck service has set the pace for all farmers. Rural express routes are also established there.

They have in that state 187 trucks running on regular advertised schedule and sailing days, hauling merchandise and farm products. These trucks do not haul any livestock. The total daily tonnage is 574 tons, for which revenue is collected and highway tax paid, making a total tonnage for the year of 172,200 tons, or 8,610 carloads, or 344 train loads. Each of the 187 trucks averages 70 miles per day.

Trucks have hauled livestock to the packing houses in Iowa, eliminating the use of cars entirely, 225,600 head of hogs, 23,408 head of cattle, 61,402 head of sheep. This would amount to 6,250 cars or 250 train loads. This would amount to 35,003 truck loads of livestock hauled an average distance of 35 miles per truck. This would also give a total mileage of 1,256,605 miles or 2,513,210 miles of highway covered by trucks hauling such livestock. This livestock was hauled by farmers owning their own trucks and by the sixty-one trucking companies operating trucks in the state, hauling freight and express from cities to small town merchants and livestock on return trips. There are some 365,000 automobiles in this big farmer state.

The Livestock Business Demands It

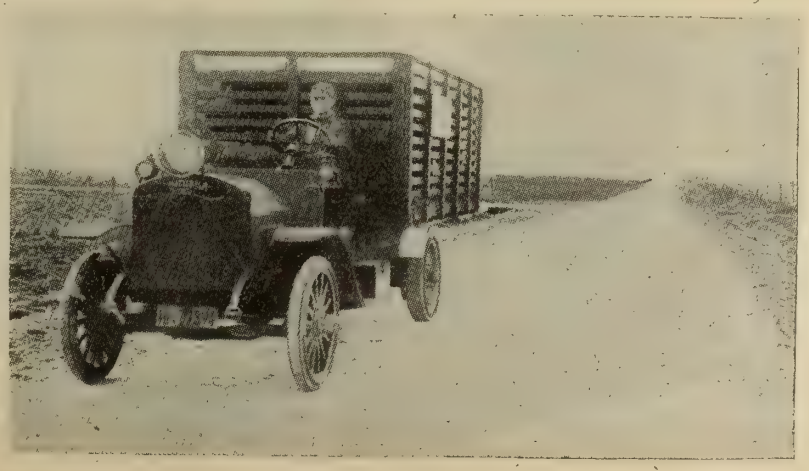
Other parts of the states are catching the idea fast. Big cattle and hog breeding farms are getting the truck habit. There were 142,220 hogs delivered to the Omaha livestock yards by motor truck in 1918.

The Cincinnati, Indianapolis, and Louisville markets receive a large part of their hogs directly from the farms by motor trucks. One typical, double-deck truck load of livestock, unloaded at the Cincinnati stock yards in the presence of a representative of the Department of Agriculture, consisted of three 850-pound cattle, seven calves weighing 150 pounds each, and 11 hogs averaging 185 pounds. Another load consisted of seven 750-pound cattle, while other loads were made up of from 10 to 25 hogs, weighing from 175 to 225 pounds each.

One shipper reports that he hauled 25 hogs 43 miles in four hours, and that the actual shrinkage of these hogs, which weighed approximately 200 pounds apiece, was from six to ten pounds.

At Kansas City a marked increase in the local drive in has resulted largely from the increased use of motor trucks. During the first eight months of 1918, 72,887 hogs were handled by motor truck and wagon, an increase of 21,505 over the same period in 1917. Denver notes an increase of 223 per cent. in sheep, 12 per cent. in hogs, and 13 per cent. in cattle in the local drive in during the first eight months of 1918, compared with 1917. At St. Joseph, Mo., the drive in during the last year has more than doubled through the use of trucks. In a single day at St. Joseph 1,400 hogs, 200 cattle, and a considerable number of sheep were brought to the market in 190 motor trucks.

The outlook for Canada is likely to be bright along this line. We can't as farmers afford to lounge behind in the procession. If good roads are going to help us out, we must have good roads, even if they do cost money. The increased revenues will amply repay all good roads expenditures.



Good roads make for better farm life and livestock hauling by truck is becoming popular.

A QUESTIONNAIRE sent to a number of bank officals brought out very clearly the fact that the person who had a well preserved and painted property had a better credit rating and standing in the community.

All the bankers were unanimous in the opinion that property kept in a good state of repair and paint entitles the owner to more consideration in a loan, that such property will sell for more money; and that it is an asset to the property owner in his financial dealings.

Riversdale Farm Uses Motor Trucks

By BERTRAM W. KEIGHTLEY

Proprietor Riversdale Farm, New Brunswick.

"CAN-I-DO-IT, can-I-do-it, can-I-do-it?" is the song that my fancy has always construed into the exhaust of my car, and no matter how long the jaunt, how steep the hill, or how sticky the mud, the plucky little heart that throbs under that snubnosed hood has always risen to the occasion, and "done it," with a will. One may not be accused of writing an advertiser's puff in praising this car, but its merits are a by-word and long since passed into the realm of accepted facts.

I was running my second roadster last summer. In my business, we raise a good deal of market produce, apples, early potatoes and garden truck. Having an excellent market but five miles distant, the produce is hauled direct to the purchaser, who in many cases is the consumer. In this way we eliminate railroad charges and commission men. Prior to the war, when help was plentiful, it used to be no trouble to get a lad to drive the delivery team, which during the season was on the road every day, and nearly all day. There was plenty of help at home to prepare the loads for him, and so we pursued our peaceful, if uneconomical way. But war came, help became scarcer and scarcer till finally last summer we found ourselves faced with the largest crop of market produce we had ever had, and no boy to drive the delivery team. In vain we endeavored to obtain help, soldiers of the soil did their best, but the outfit came to grief often in their inexperienced hands, and orders intended for Mr. X had an uncomfortable habit of being delivered to Mr. Y. So we made up our minds *to purchase a motor delivery truck.* We realized that this would add considerably to our delivery costs, but we felt that in time it would pay for itself in time saved and in larger loads, incidentally rather tickling our vanity at being the first farmers in the district to adopt motor delivery.

On visiting the motor salesman, however, our enthusiasm received considerable of a damper. Motor trucks there were in plenty to be bought, with lovely shiny bodies and nice canopy roofs, but the prices in all cases were much higher than we felt justified in paying. In most cases, we decided that the cars were too heavy for our roads, which are to state the case mildly, bad. They were built for city traffic. We returned home somewhat disappointed but after some reflection decided that all was not lost.

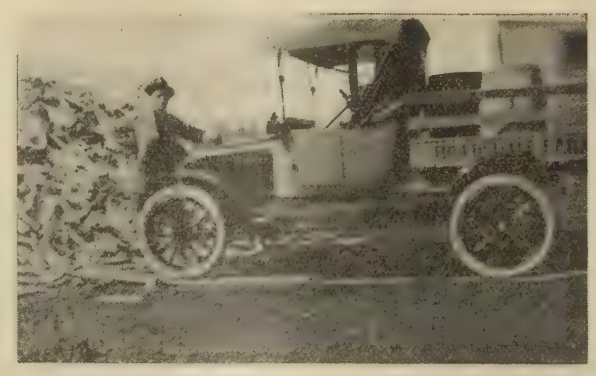
Now our particular car had been a good friend; it was a roadster, and had given us many a pleasant trip and just being made for two, well—need we say more?

We had seen a good many light cars turned into trucks; in most cases the body was removed and a long open box substituted, with a very crude seat for the driver and no protection of any kind from wind or weather for him. Now it was not our purpose to destroy the car's utility as a passenger vehicle completely, later on we might acquire a car for hauling only and in that case we wanted to be able to put it back onto the old job again. So we ran the car into the garage, jacked her up and went to work as follows:

Making Our Truck

The rear spring was removed, taken to the blacksmith and another leaf added. Two stout blocks of rubber were procured and fastened to the rear axle in such a way as to deaden the shock when the car was loaded heavily and struck a bump. These were the only changes made to the chassis.

The rear deck or tool box was removed and its place as tool carrier taken by a long stamped steel box on the running board. The rear tire carrier was moved to the running board on the other side and placed well back against the rear fender so as to leave the door free to open. A frame work of hardwood 1½ inches by 2 inches was bolted together as per sketch. The width is the exact dimension of the platform exposed by the removal of the deck. This was not wide enough for our purpose as we wished to provide for two barrels of apples side by side, but the two inches raise obtained by the framework brought us high enough to clear the fender stay rods and get a width of 42 inches. Clear ⅞-inch flooring was nailed crossways direct on the frame to form the floor and the edges trimmed neatly. Care was taken to draw the joints up tightly so as to have a tight bottom to



The author by his own woodpile with his farm truck

the box. The sides and front, 8 inches deep, ⅞-inch thick, were now fastened on, screwed up through the floor and stayed with three right-angle brackets on each side. These brackets were simply forged from an old carriage tire, as were also the three upright irons supporting the side slats. These irons were bent slightly outward on reaching the upper slat, so as to give it a slight flare outwards. The drop tail was hung in some stout strap hinges forged specially for us by the blacksmith. We paid special attention to getting a durable job on the tailboard, as this is generally subjected to heavy wear. For fastening, a light electric weld chain was fastened on one side, passed through rings along the outside of the tail and drawn through another stout ring on the outer side of the body. About a foot slack chain was provided, with a small grabhook on the end. This form of fastening enables us to use that tail at any height, or lower it completely. A fillet strip of half-round section, 1-inch wide, was put along top and bottom outside the box, the lower strip covering the joint between the floor and sides, and giving a neat appearance to the box. Three iron strappings were made from old carriage tires and screwed lengthwise on the floor to carry the wear and tear. Small square iron plates with square holes to receive the half-inch bolts which were used to hold the box on were provided, also to screw to the floor. These kept the bolts from turning when tightening the nuts. These bolts were about 10 inches long and went right down through the sills of the box and of the car and instead of ordinary nuts that would require a wrench we used wing nuts that could be tightened by hand. It is the matter of a few minutes to loosen these and remove the box.

Its Produce Capacity

We now have a serviceable strong box that would hold 6 barrels of apples, 16 bushels potatoes, or much bulkier loads. The passenger accommodation had in no way been interfered with, and when we so desired, it was a simple matter to replace the deck.

While we were about it we smartened the car up and used a new color scheme. The fenders, hood and running gear were left black, the wheels painted red, and the body and box grey. This is a very smart combination and when the name of the farm with telephone number were lettered on the sides of the box, it made a taking outfit. We always endeavor to keep it clean and smart, as a well-kept vehicle brings credit to the owner and often attracts business.

During 1918 this vehicle *was constantly on the road and nearly always heavily loaded,* the usual load approximating half a ton. The reinforced rear spring with bumpers was found adequate to carry the extra load. The chassis seemed to stand the racket perfectly, the engine performing as efficiently as ever, though of course needing more low gear on hills and in mud.

An Emergency Call

The time it saved was incalculable and there was almost always a load both ways. An instance of emergency aid it rendered us may be of interest. After a long wet spell in the fall, during which we anxiously contemplated our three large potato fields, the weather took up and we were at last able to commence digging. Our force was small, much smaller than in other years when we had less potatoes and more time to dig them. We realized that if we could get enough pickers and keep the digger moving constantly, much time would be saved and the weather had been so changeable that we felt no confidence in the duration of the spell of fine. The first morning we dug, I put on a couple of boards crossways in the box and sallied bright and early over to town where I collected up a load of some ten boys of 15 or so. I was back with them inside an hour and with this greatly augmented force of pickers we made great progress. I had to take them back at the close of the day, but that was only a short job.

The scheme worked so well that it was repeated each day until our crop was safely housed. It was no trouble to get boys, the motor trip into the country appealed to them and though some wanted to play, a small display of teaming kept them at work.

Almost as soon as we had got all the potatoes in the cellar we had heavy rains again. This is only one case of many where *our truck has been a veritable Godsend; we have hauled livestock, machinery, fertilizer, coal, all in addition to our produce, and all without in any way destroying the comfort of the car.*

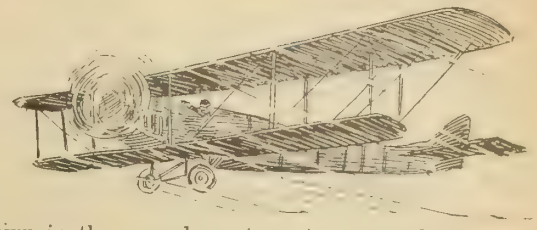
Immediately after haying I had opportunity to get away for a vacation. I took the box off and, replacing the deck and with trunks strapped on the running board, we had a delightful tour through Nova Scotia, taking in Evangeline Land and covering over 1,000 miles in nine days. Our car seemed none the worse for its heavy duty at home and indeed no one who did not know would have ever dreamed of its humble role at home.

For the motor car owner with plenty of that useful adjunct known as money, there is no limit to the luxury in which he may travel. He may even, as with the family pictured above, have his own motor Pullman coach, wherein to cruise the roads of the entire country, free from all consideration of when and where, relieved of all necessity for coming into intimate contact with his fellows, except on precisely the terms he shall elect. This private motor Pullman has literally all the comforts of home. Its beds are as comfortable as the biggest four poster. It has a tidy little kitchenette, a bath, seats that are as luxurious as the big leather armchairs in the library at home. The caravan cult has a strong following in England, but it is only just beginning to get a foothold in this country. With such possibilities as the one shown above, there is reason to hope that motor caravaning may become a popular American sport.

Passed as a Flyer, Tho' Plump

By J. VERNON McKENZIE

Ex-Lieut. Royal Air Force, author of "Raiding the Rhineland," Bombing the Boche," etc.



I SUPPOSE a good many of the readers of FARMERS' MAGAZINE occasionally glance over the *Saturday Evening Post*. If so, you will have noticed that a chap by the name of Irv Cobb writes a good many of their best articles and stories. Well, I'm going to admit right at the beginning that I am a good deal like this guy, Cobb, myself.

No, gentle reader, I don't refer to his ability as a writer; it's all I can do to convince my wife, or F. M. Chapman, that I know anything about the writing business. And even my wife won't believe it until I bring home the check for my latest effusion.

What I mean is *that Cobb weighs around 230-odd pounds.*

And, so do I!

All of which is preliminary to stating right here and now what has been my greatest grievance since I returned a few weeks ago from the wars. You can picture me strolling down Yonge Street in "civvies"—for a while the "stroll" was a "limp," but that's another story—and a friend hails me. In a couple of minutes, after he has finished telling me what a lucky chap I am, he's sure to ask:

"And, what did you do in the great war, Mac?"

"Oh, I was in the Flying Corps."

"*Flying?*"—incredulously.

"Yes, *flying*," I bark back at him, as I gently shift my sylph-like figure over until most of the weight is on my good leg.

"B—b—b—but," he stutters, "I thought one had to be a certain weight to get into the Flying Corps."

"One does; if I tramped on your pet corn, I'll wager you wouldn't deny that I had a 'certain' weight."

"No, but I mean they only took young fellows who were around 150-175, I always understood. You must be—*all* of that," he ends tactfully.

I was led by a khaki-d girl guide of about fourteen summers . . . to the tender care of another girl guide of some thirty-six winters.

Which leads me to the story of how one gets into the Flying Corps—or at least how one got in during the summer of 1917. Some 10,000 and more Canadians took up this branch of the service, and many scores made records of imperishable fame, so you may be interested to know how the authorities selected their flyers.

When orders came through Canadian G.H.Q. that the Royal Flying Corps wanted officers as pilots and observers two of us decided that we would try to make the physical grade. Before I tell about my own experiences in "getting by" the doctors I want to digress to pay a tribute to my chum. A few days previously he had had—for the second time since his enlistment a year and a half before—a recurrence of a very severe physical complaint. He was the eldest son of a farmer in ——— County, Ontario; it wouldn't be fair to identify him more closely.

After this trouble, the M.O. of our battalion told him, confidentially, that he would never be allowed to go to France with our unit, and that he must be prepared to return shortly to Canada—unfit. This almost broke his heart, for sometimes as long as a year or more elapsed between the recurrence of his trouble, and he did *so* want to do his bit.

I suppose some super-sanctimonious person will call him a thief and a liar for what he did. He bribed the Orderly Room Sergeant to "accidentally" lose his medical history papers, and he himself rushed off to London, confronted the Flying Corps Medical Board, denied that he had ever suffered from any serious complaints, and in a few weeks was in France.

For five months he flew over the enemy's lines, almost daily, and then returned to England for a rest. Only then, some weeks later, did he own up to his trouble, and now he's back in Canada. He is satisfied; he "got in his little bit," as he likes to phrase it.

When I told the C.O. I wanted to go to the R. F. C., he looked at my portly and rotund figure—for even then I hovered around the 200 mark—and said he could not imagine me soaring, bird-like, through the ambient atmosphere. But up to London I went.

First of all, I hunted up the commandeered Hotel Cecil, where the 1,500 rooms, which for so many years were filled with a liberal sprinkling of Canadian tourists, had been taken over for the accommodation of the D.G.M.A.S. (which, being interpreted, is: Director General of Military Aeronautic Service). I was led by a khaki-d girl guide of about fourteen summers to the end of a long corridor, where she handed me over to the tender care of another "girl" guide of some thirty-six winters. She piloted me to Room 30, and left me amongst a bunch of others, similarly inclined. I took a look at the door of Room 30, to see by the names who were within.

"Major Donald Cameron."

"Marie Antoinette."

These were the two names inscribed on the door, and I jumped to the conclusion—perhaps hastily—that it was the former whom I was seeking. Being in a commandeered hotel, you may perhaps guess why poor Louis' wife's name adorned the door.

After much waiting, I was told by a second lieutenant within the portals that I had not put my application papers through the proper channels, and consequently could not be examined until I did so. I explained to my little friend — slangily, but popularly, known as a "one-star general"—that I bally well knew this, but in this case I wanted the cart before the horse, and wished to know *before* putting in a definite and official application whether there were any aerial Dreadnaughts constructed to elevate one of my portly proportions.

He was very nice, indeed, about it, and implied that the reason I wanted things done *not* according to the customary procedure was amply explained by the fact that I was a Canadian. (By the way "being a Canadian" always covered a supposedly multitude of sins *ovah theah.*)

So I received a little slip of paper which entitled me to be thoroughly overhauled, and included a right to an exhaustive—as well as exhausting—examination of all my working parts.

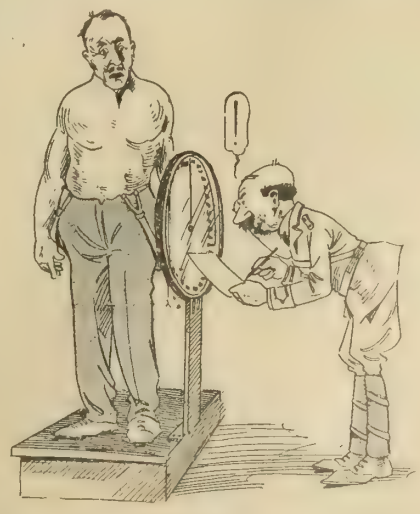
More waiting of course. Waiting is one thing a Canadian has to learn when he stacks up against an Imperial red-tape office. (There was an item in the British papers a few weeks ago stating that a gentleman who had been in the Cecil since 1914 had returned to his civilian job; *Punch* naively asks: for whom had this man been waiting?)

Finally, I was invited to strip to the waist and await the inquisitors. There were twenty-four officers waiting that same day, and I observed that *twenty three* were Canadians.

The first two doctors measured me, and recorded the figures. Then one weighed me, with his eyes fixed intently on what the scales were registering. Without looking up, he said:

"I say, y'know, only *one* of you bally chaps at a time, what?"

I assured him that it was just "little me," and when he looked up he gave a gasp. But I must say the old beggar was a good sport, and he didn't seem to believe the Flying Corps was reserved for lithe, svelte Adonises, for he winked almost imperceptibly—or gave the English equivalent of one—as he put me down in the records as two stone less than the scales showed. (It actually had the audacity to record 15 stone, 2, which is *some* heft, you must admit.)



Then one doctor weighed me. . . . Without looking up he said: "I say, y'know, only one of you bally chaps at a time, what?"

Then, they eye-tested me, and it was not the old chart which had grown to be as familiar to every member of the C.E.F. as his jam and cheese for supper. It was a series of letters on a box, with the four sides lettered. I knew my right orb had always been no better than it should be (to put it mildly) and so I rather quaked in my shoes. (An unkind friend says I should substitute "Wobbled like a jelly.")

I stood 20 feet away, and the M.O. had me read first with one eye, then with the other, then—burrrr— went the box, and another series of letters was exposed. I didn't do very well in this test, though he marked my left eye 6/6, which implies normality. He buzzed the box again, and he gave my right eye another chance. I couldn't make head or tail of it.

"A-humph," he said, and turned the test-box to its fourth side.

Ah! I "smoled a smile" of relief—and welcome. For it was our old friend whom we met so often in the C. E. F., and whom I had encountered in Ottawa, Toronto, Montreal and London, Ont., until I knew him by heart. It was that same old series with the V.B.D.T. line, and I scored well enough so that he marked my right optic no worse than 6/9, which implies two-thirds normal.

He asked me, then, some very intimate questions as to my medical history, family history, diseases of sundry natures, and biffed, pounded and cuffed me around a good deal. He felt my biceps, and remarked that the left one ought to have a little more muscle. I tried flexing it, and he added, hastily, that by his remark he did not mean to imply that he would really like to meet me in a dark lane at dead of night.

"Pick up your garments, don't put them on, and pass into the next room," were the final orders, and as these particular rooms in the Cecil were not built *en suite*, I had to perambulate the corridor thus clad for a few yards—hoping to meet no dashing girl guides or blushing V.A.D.'s on the way. Who was the old blighter that was a man from the waist up?—old Centaur, wasn't it? I don't know why, but some vague analogy between him and myself would come popping into my mind just then.

The next room held five Canadians and one Imperial Officer when I entered, and three more and an N.C.O. were later added to our number. We had four chairs amongst us, and as for disposing of our upper garments we could take our choice of putting them on the floor, balancing them precariously on a Japanese screen, or laying them on the office filing system. I added mine to the files, and then waited—for two hours. The applicants were taken, one by one, to the other side of the screen, and there tested.

First, my turn came for a chair; then, for the tests I had to submit to another inquisition as to the ailments of myself, ancestors, relatives, far and near. Then came a series of interrogations as to my sporting interests and I had to trot out my few achievements in tennis, Rugby, canoeing, etc.

Then, did I drink? Shades of N. W. Rowell, what a question to ask *me?* No! Never had, did or would. Smoke? Well, scarcely, only to be sociable or when I had them given to me.

My academic, professional, and mental attainments, in all their meagreness, were dragged into the open; also, there were a great number of other questions too numerous to mention here. I told him I had graduated from a Nonconformist college, and had a B.A., and he said he didn't hold that against me.

"Can you hold your breath?"

Continued on page 4[illegible]

FARMERS' MAGAZINE

Canada's National Farm Magazine

AN AGRICULTURAL PAPER FOR ALL FARMERS IN ALL PARTS OF CANADA

FARMERS' MAGAZINE is independent of all parties, is the mouthpiece of no organization, is illustrated with many original photo engravings, and handles as many as seventeen departments of farm work in a practical manner, giving absolute and reliable information.

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REMITTANCES should be made direct to FARMERS' MAGAZINE, 143-153 University Ave., Toronto, either by money order, postal note, express order or registered letter, which will be at our risk. Postage stamps accepted in payments under $1. As most of our subscribers prefer not to have their subscriptions interrupted, FARMERS' MAGAZINE will be sent to subscribers until an explicit order is received for its discontinuance. The date of your label shows to what time your subscription is paid. All subscribers are held responsible until all arrearages are paid and their paper ordered discontinued.

EDITORIAL communication must carry the correct name and address of the writer. Anonymous articles will not be considered. Matter for publication must be written on one side of our usual rates. Contributions for which we pay must not be the sheet only. We are anxious to receive interesting articles on agricultural subjects that are of practical value to any members of the farm family. Short, pithy articles of value in any departments are of special worth. Photographs of farm scenes, experiments, contrivances, power, and household conveniences, as well as the accepted articles, will be paid for at submitted to other journals after acceptance by us. Rejected matter will be returned if postage is enclosed.

CONTRIBUTORS' names will not be forwarded, as they are considered confidential.

Address—FARMERS' MAGAZINE,
143-153 University Ave., Toronto, Canada.

Vol. XII. MAY 15, 1919 No. 10

LABOR AND THE COST OF LIVING

IN view of the general upheaval of labor throughout the country we quote in advance from an article by Capt. J. E. Lattimer, which will appear in our June first issue. Of our prospects of immigration Capt. Lattimer says:

"There are naturally most splendid prospects in this country. Unfortunately by trade restrictions, high cost of living and exorbitant labor charges in some lines, these naturally alluring prospects are for the present time obscured.

"There is no particular class of people solely and only to blame except that class which forms too large a proportion of our population who are determined to "get something for nothing." Just how large a proportion of our population that includes is revealed by the number of those who are loaded up with real property from timber limits to city lots in every Province from the Atlantic to the Pacific.

"We have developed in this country a most expensive system of distribution. There may be some excuse for this. But many of the results are beyond all reason. For instance a leading Toronto paper when acquainted with the fact that the cost of living in Toronto was higher than in London, England, expressed surprise. It is too bad that this editor was not included in the party that spent part of the summer overseas. For there are none of those who have spent the past few years overseas who are not aware of the reason why this unfavorable comparison in condition between Canada and the Motherland to-day obtains.

"Among other reasons are the influence of the speculator who has unduly advanced land values, the trade restrictions which allow industry to be to a certain extent monopolized and the exorbitant demands of labor which in many lines has during the last few years been overpaid.

"These points all combine in making a dollar look like thirty cents. When a returned soldier drawing $1.10 per day purchases a cup of coffee and a piece of pie in a Greek restaurant in Toronto the charge is 40 cents. Things happen and people wonder why?

"When we realize that food and shelter are much less costly in Britain than here, is it not too much to expect a great influx of desirable people from the land? Certainly those who are able to take advantage of greater chance of employment and a higher wage will find tempting enough conditions. Unfortunately those ranks have been somewhat seriously depleted. In the place of which we have many who are somewhat poorly equipped to fight life's battle. They seek a home where a small income will not be entirely impotent. To these men this country cannot prove attractive until we re-arrange our ideas on the question of comparative values."

IN these days of unions and strikes and general clamor for higher wages there is one public servant, the rural school teacher, whose cause is supported by no organization, who has never been paid enough and whose salary has not increased in comparison with other salaries and prices. The teacher is supposed to be a person of ideals who "works for the very love of the work and never grows tired at all."

A live epidemic of censure of the "little red school" and "the little girl school teacher" has been spreading rapidly over the country of late, and everyone from press and platform people to parents and trustees seem to have caught it. This is a good thing. It has at least stirred up interest, and where people have been moved to turn out and see the inside of their schools for the first time and to have them cleaned up and repaired and made more livable, they have met the girl teacher in her own field and become better acquainted. Even the most critical have sometimes discovered that if they had been trying one-tenth as hard as she had to make the school what it ought to be things would have gone fairly well.

Granting, however, that some of the teachers who come to the country are very young and inexperienced, the average girl who makes teaching in the country her profession, is rather serious-minded, with an ambition for service. If she were not, she wouldn't spend four or five years preparing herself to teach for five or six hundred dollars a year, when she could go to a Business College for six months or a year and command a salary of from eight hundred to a thousand with better prospects of working up to something better in the line of secretarial work. The average teacher is a refined, well-trained, superior type of girl—the kind of young woman people are glad to have their children associated with for five days a week, but the good teacher for the country is growing scarce. There are too many other fields where she will be better paid and more appreciated. It is rather a disgrace to a section to complain that they can't keep a teacher—everyone knows that the trouble is very likely that they won't pay enough. And other wiser Boards don't hesitate to offer a good salary for a good teacher. They know that the difference in their taxes won't be worth considering because a considerable part of the salary comes from a provincial grant which the more economical section in the provincial scheme of taxation helps to make up.

A LIVING MEMORIAL

THERE is a demand for some great National Memorial to commemorate the lives of the boys who went to fight for democracy, but who will never come back. The memorial suggested by Dr. Emmett Holt is not of brick and stone and mortar, but of flesh and blood and spirit—a living memorial. It is one thing which can not be weighed and measured, because it is boundless, because it is composed of millions upon millions of lives of little children—young lives that will be fuller, and freer, and more joyous and wholesome than they would have been had we not suddenly been awakened through the war to their precious quality. We propose a great Child Health movement, which shall set a new standard of health for American children. What more fitting memorial could there be for our heroes than that by their deaths they should lift into health countless lives that would otherwise be stunted!

The same patriotism which sent men to die for a democratic ideal is to-day demanding that children be given an opportunity to live out that ideal.

One of the great lessons brought home to us by the war is that health, under conditions of modern life, is not a thing which will take care of itself. The child bred under conditions of civilization can not be relied on to grow to healthy, vigorous maturity like a young chipmunk or rabbit in the woods. He needs special education in health habits, if he is to develop normally. The revelations of the selective draft have brought us up with a start. They have revealed us to ourselves, as we really are, not as we imagined ourselves to be. We have learned that physically we are not the superb nation that we thought we were. We discovered that approximately one out of three of our young men, in the best years of their manhood, was physically unfit to bear arms.

THE FARM AS A UNIVERSITY

IN the country how early a boy learns that when it is time to get hay in it is time to get it in; that when a storm comes up your hay is either in the barn or spoiled; that when springtime comes, if you are going to have a garden you have to plant your seed. You can't argue with your parents about it or convince yourself that another week will do; and you can't plant vegetable seed and get a flower garden. You early wake up to the fact that you work right along Nature's rules without any theories if you want success, Nature is far more ruthless than school-masters or parents. She never makes excuses herself and she never accepts apologies.

And so it seems that Lincoln was thinking very straight and very true when he said that it was the most valuable of all arts to get a comfortable living from a small area of soil. He did not mean just the material things that you can take out of the soil. He was too wise for that. He meant that it was doubly valuable because, besides making a livelihood, you learn all of Nature's lessons. You grow to estimate life from her standards; you realize that her unflinching ways are good ways and her friendly moods wonderful to share.

EDITORIAL NOTES

MAY it be an enduring Peace.

EVERY scrub animal is a sign of waste.

NO scrub cow ever made a record.

A MAN is often known by the will he makes.

PLANT that shade tree now before the season passes.

OUR livestock department should be on the overseas job.

WHY not export oleo and keep our good butter at home?

WHAT'S wrong with our O.A.C. mechanical equipment?

TRUCK farming may be known now as motor truck farming.

YOUR farmers' club will be no bigger than you make it.

LIVESTOCK futures looks good for the breeder of first-class stuff.

IOWA Agricultural College sold $3,950 worth of fat hogs last week.

ARE women getting a square deal in the law-making of our country?

THE eggs and butter money on many a farm now is no inconsiderable item.

CANADIAN spring weather is a moral equivalent for war, say the farmers.

PRODUCTION from every acre is needed and spells that much more farm income.

THE more brains a farmer puts into his soil, the more time he has for leisure and for travel.

ALREADY the farm hired man has a good time, a good wage, and mighty little responsibility.

THE chief end of memorials should be to make better men and education is the only way to do it.

MACKENZIE was born near Paisley in Bruce; that's Scotch enough to win whatever he goes after.

A MAN may not be lazy physically and yet be a loafer mentally. The alert man is a strength to his vicinity.

IF THE man who works for wages is as intelligent as he claims to be, will he push his demands past discretion?

THE Women's Institute speakers are announced and the rural meetings are shaping up for a good attendance.

FARM viewpoints and the ideas of country life should pervade the Canadian Press Association meetings more than they do.

TRUCKS and tractors advancing into farm work do not mean that draft horses are not needed. The big draft horse will be higher in price than ever.

A JUNE DELIGHT

The first issue of FARMERS' MAGAZINE *in June will carry some livestock stories of supreme interest. Watch for the stories of horses, cattle, sheep and hogs, as well as the inside of the livestock conference being held at Ottawa to consider overseas trade.*

Also electric power costs for Ontario farms are fully detailed.

A Bargain in Tires

EVERY bargain is not a matter of price. It may be a matter of value. Tires, for instance. If you were just buying so much rubber and cotton, price would be a good gauge.

But you're really buying miles of service.

And on a basis of miles per dollar the Goodyear Tire is a real bargain.

You can buy cheaper tires—but not cheaper mileage. There is no more sure way of reducing your motoring costs than by equipping all four wheels with Goodyear Tires.

This thought has always guided the Goodyear organization. The Goodyear Tire as offered you to-day is the result of constantly striving to put more miles into tires at fair prices. Our success is marked by the approval of the world's motorists—they buy more Goodyear Tires than any other brand.

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GOODYEAR

MADE IN CANADA

A PARABLE *of a* GOOD STOCKMAN

By ETHEL M. CHAPMAN

THE stockman surveyed the fields with his blue ribbon herd turned out in the sun to pasture. It was the occasion of his one spring ecstasy. Something of the Psalmist's reference to "the cattle on a thousand hills" stirred his soul with a real thrill—and the elation was not less because he knew there was only one hill in a thousand with cattle such as these. Each was an individual as to breeding and up-bringing with special possibilities ahead. Their well-groomed coats shone in the sun like the marcelled waves of an actress, and he understood them as few men understand their nearest friends. He never came into the stable but every head was stretched out to him with low, affectionate little bawls. He never passed an animal without petting it. No doubt it was the expression of a natural affection but it was part of his creed that it paid to pet animals—they just naturally thrived on it.

For a few hours in the evening his little boy helped around the barn. He was a large-eyed, sensitive wraith of a child; it would have been good for him to play around the stables all day if he had liked it, but he never stayed longer than was necessary. He climbed the loft, put down the hay, dutifully did the chores that were his daily stunt and wandered off by himself. The trouble was partly that he didn't feel much like playing, partly that no one encouraged him. He hadn't much in the way of comradeship with his father, for the strange thing about the stockman's creed that young animals thrived on kindness and petting was that the same law shouldn't apply to children.

When he came into the house this evening two younger children, little girls, waited rather shyly in the kitchen. One was just a baby. She was quite as perfect in her way as the little white calf that had claimed his unnecessary attention for ten minutes before he came in, and she liked attention just as much, but her father tired of her sooner. He went off to his desk in another room to look up the pedigree of the white calf for a prospective buyer,—not so much because he was anxious for the sale as because he was proud of the pedigree. The man's offer was good, perhaps more than he would ever be offered again, but the calf was a beauty; he hated to part with her,—he was a man of some sentiment. It was the topic of conversation at supper but it was a rather one-sided conversation; the rest of the family didn't seem so much interested; perhaps they were a little jealous of the white calf.

LATE in the evening he came in from a busy day, tired but happy in knowing that he had accomplished all he had planned to do; he had an equipment in his barn that made it possible for him to do two men's work, to get along without a man. His wife had also had a busy day, was also tired. For the last hour before dark she had been making a flower-bed, digging the ground with a spade and carrying manure in a wheelbarrow. He told her what he had been doing and she was interested. She didn't tell him what she had been doing because he wouldn't be interested. Anyway the thing she had been saving to tell him was of far more importance to her than anything she could possibly do herself.

"Billy came first in his report this month," she told him. "Considering the time he lost from school this winter with one cold after another that's pretty good. I wish you would tell him you are pleased about it."

He *was* pleased about it—as pleased as when a calf of which he hadn't expected much came out of the show ring with a red ribbon on its halter. But he said:

"I'm glad he's getting on, but you know it isn't my way to say anything."

Still, he had always argued that it paid to pet animals—they thrived on it. Even Billy, sensitive, timid, little soul might have thrived on it.

Billy didn't thrive very well. He had never had a chance,—not even before he was born. They had built the barn that summer. It was a complete and extensive building, worthy to house the aristocratic herd and their descendants for years to come. There was running water piped to an individual drinking-cup for each cow, a scientifically approved arrangement for ventilation and light, no end of cement work and building of litter-carriers and chutes and feed boxes, everything to make the place clean and livable for the animals and convenient to work in. And it took a long time and a lot of men and the men had to be boarded on the farm. It was impossible to get help in the house,—girls who could earn from twenty-five to thirty dollars a month in a house with steam-heat and electric light and mechanical devices of one kind or another to take all the drudgery out of house-work were not easily persuaded to come to the country to carry water from a pump, cook for a veritable boarding-house of workmen and be laundress and general housemaid all at once. Billy's mother never thought of not doing it because it was there to be done—and when Billy came he was delicate. It was a disappointment because he should have been strong; his ancestors for generations back had been the strongest people in the country.

"It's a strange thing," the stockman remarked to the doctor, "what's coming over the children these days. Look at those colts now—stronger and livelier every generation. That's a pair of beauties there, and they've had no special attention."

"I suppose you haven't had much work from their mothers this year?"

"Oh, no—never expect to. It doesn't pay."

It's been a great joy to watch her unfolding—she's very much like her mother now.

YET the stockman had a respect for professional help. He was quick to detect the beginnings of trouble in his herd and if a calf showed any sign of being "off its feed," was not responding to his efforts to make it thrive, he was not slow to call an expert.

"They're too valuable to take any chances with," he reasoned, and he had few losses. If he had only had the same anxiety for Billy!

For Billy was not up to standard. His mother worried about it, and mentioned it frequently.

"I think we ought to take Billy to the doctor," she would say, "or Billy doesn't seem to care about playing like other children and he doesn't eat like a boy should. I don't think he can be well." But his father would always assure her that there was nothing seriously wrong. He had always been like that, he would get over it when he was a little older.

She didn't say "I guess if your best calf wouldn't eat or wouldn't play you'd think there was something the matter." She was a gentle-tempered woman who relied on her husband's judgment in matters of importance. Anyway this was something he ought to understand. He had the reputation of knowing more about how to make young stock thrive than any other two men in the county. He ought to understand children; there wasn't really much difference.

One day when the stockman went into the stable the white calf didn't come tossing her head to meet him. Her eyes were dull and by a thousand tokens she showed that she was not well. The stockman was considered the best general herdsman in the county but he didn't take any risks with his own unprofessional methods in this case—the white calf was too valuable. Besides it was nearing fair time and every day of indisposition was worse than wasted in getting her ready for the show ring. He called a veterinarian and they worked for half a day with the white calf's teeth—that was all that was the matter, and the stockman might have tried remedial ways of his own indefinitely. It was a matter that only a professional could handle. Strange, however, the professional's observations went a little beyond his particular field

"Your boy doesn't look very strong," he observed. "Anything the matter with *your* teeth, little man?"

Billy didn't know whether there was or not. He knew that they ached quite a lot, but he had never seen a dentist except once when he had cried all night and kept the family awake and they had despaired of the tooth ever coming out itself as a first tooth is supposed to do. Billy must have lost a lot of time when he should have been growing and playing and getting along at school, while that tooth was hitting it up fit to drive him mad, or gnawing away while he crouched over the warmth of the stove and found no joy in living. He had other troubles too. For a long time no person knew why he should have one cold after another, all winter, why he was tired and didn't care to play. Then some women in the neighborhood brought a doctor to the school to give the children a general health inspection. It was a new idea and it met with some prejudice, and the thing that surprised those interested was that Billy's father, the leading farmer in the section, should be opposed to it.

"It was entirely out of the province of the school," he said, "to interfere with a matter which was the responsibility of the parents. It might be all right in the slums of the city from which the doctor came, but it was—well—rather an insult to an enlightened community."

And the doctor, who was a woman with some experience of school visiting told him that she had seen many schools in poor city districts with a lower per-

Continued on page 29

Overland

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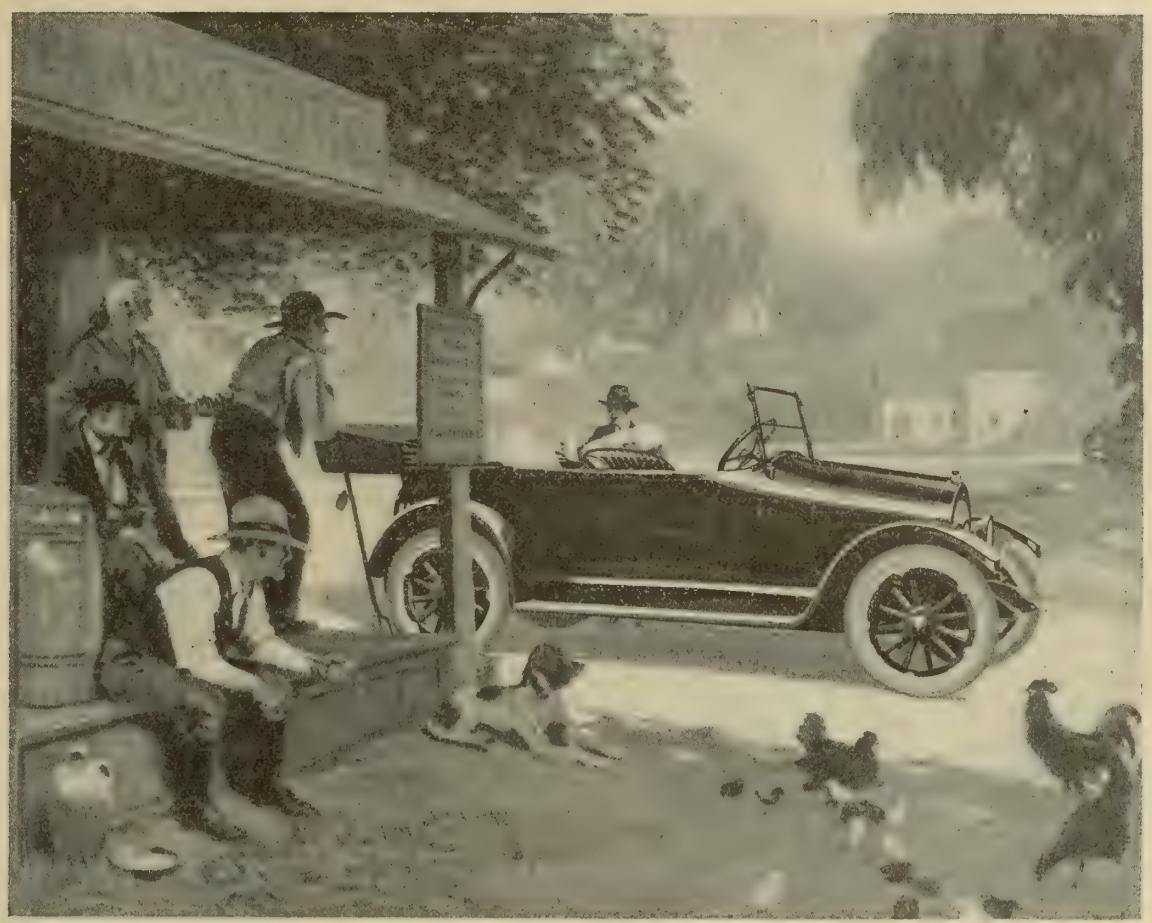

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A Man From Bruce

By Prof. WADE TOOLE, B.S.A.

THE Canadian farmer, at this stage of the twentieth century, reads his agricultural paper critically. He is what is generally known as a well-read man, and is always anxious to supplement his own farming experience with all the available knowledge of both a practical and scientific nature that he can glean from the experience and work of others. He reads to reinforce his knowledge, to profit mentally and materially therefrom. Consequently it is necessary that the editorial staff of a farm paper have an abundance of practical experience supplemented by the best possible scientific training. The agricultural editor must know whereof he speaks, must exercise good judgment at all times and must be in sympathy with the farmer from intimate knowledge of the problems the man on the land has to face and solve. A man who should fill the bill in his own particular line is Chas. F. MacKenzie, who joins the staff of the FARMERS' MAGAZINE as livestock editor. MacKenzie, as his name implies, is Scotch, and a Scotchman who likes livestock and knows livestock is a good Scotchman with whom to be acquainted.

Mr. MacKenzie was born near Paisley, in the good old livestock county of Bruce, famous for its beef cattle and high-class draft horses. His parents came out from Scotland many years ago and settled in the district which he still calls home. As a boy he became interested in Clydesdales, Shropshires and high-quality beef cattle bred on his father's farm, where he remained until seventeen years old, when he left to take a three-year course at Woodstock College. After completing this course, he was for several years engaged as manager of a stock farm in Elgin County, where he had under his control a herd of producing Jerseys. His farm experience and his love for good livestock, together with his educational training, developed in him to a marked degree his inherent desire to increase his knowledge, particularly of things agricultural, so he decided to take a course at the Ontario Agricultural College. Of mature years, his ability and experience were soon recognized by his fellow students and by the staff, and "Mac's" popularity with both was recognized throughout his course.

A solid, hardworking student he was selected for many important positions among his fellows and made good. He took his place in the field of sports, particularly on the Rugby team. In his final year he was President of the Animal Husbandry Club at the College. He was also agricultural editor of the *O.A.C. Review* and handled his department to the satisfaction of all concerned When the race for the Stock Judging Team came in his final year, MacKenzie was in the running from the start and one of the first men chosen to represent his College in the critical contest at Chicago. He was a tower of strength to the team, and when the final reckoning was made he had the great record of standing third among all competitors, only one point behind the second man and only eleven behind the leader and gold medalist, who was also on the O.A.C. team. Besides this he was high man in judging beef cattle with three absolutely correct placings out of three classes judged and almost a perfect score on reasons. His past record is good. In addition to his practical experience and his college work he has written articles for the agricultural press and so should be ready to tackle the big job he now undertakes, equipped to separate the wheat from the chaff and deliver it in the best possible condition to the large clientele of the FARMERS' MAGAZINE.

Mr. MacKenzie is a married man with three young "Macs" added to the clan. He worked his way through college. He gained his practical knowledge of farming in the hard, but good, school of experience. He will write as a farmer stockman to fellow farmers and stockmen. May his work be well received and may he grow in knowledge and influence through the opportunity which is his!

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A117

A Town Meeting of Farmers

By THE EDITOR

THE County of Brant, Ontario, has a live farmers' club. Brant County is a first-class farming county and has as its centre the fourth manufacturing city in Canada. Consequently one expects the winds of class opinions to blow rather vigorously in this region. Protection and free trade, country life and city life, tariffs and platforms are themes for any town meeting at any time.

Last week the farmers' club called a meeting to reply to one the local manufacturers had called a fortnight previously. A large audience of farmers and labor men under the chairmanship of a local clergyman listened attentively to the speeches of W. C. Good, E. C. Drury and John Harold, M.P..P.

W. C. Good, BA., a leading farmer near Paris, with a thorough grasp of economic questions, brought evidence to disprove some unintentioned misrepresentations made by Mr. Cockshutt, M.P., at the former meeting. He showed that farmers were not profiteers. The farmers' platform asked for raw material to be placed on the free lists. Farmers were not evading the income tax as Mr. Cockshutt had intimated. He asked why the Brantford Binder Twine factory was flourishing under free trade. Mr. Good claimed that the Canadian Manufacturers' and Reconstruction Association advertisements were mutually destructive, in that one cannot pay revenue if he persists in buying Canadian made goods. Workingmen, he said, would get more wages under freer trade, that is real wages.

E. C. Drury, of Barrie, was in splendid form and carried his audience's attention well. His remarks were extreme at times, yet throughout were permeated with good humor and apt illustration. His main contention was that the farmers generally favored a lower tariff as a good national policy, one that would permanently build up Canada, pay our immense war debts and prevent our country from going into bankruptcy, because of our big international debt due to the war.

These are some of his epigrams:

Farmers are not different from city men. The farmer, though, is an incurable sentimentalist.

The farm is not paying enough to attract labor, either domestic or farm, from the city.

I was born a farmer. This is the 100th year our farm has been in the family and my forbears were farmers for generations in England.

Reduce the standard of living in our farm homes and you injure the best hope of the nation.

Not a statement of mine made on the economic questions has been proven false.

Our new foreign indebtedness is $4,3,000,000,000, with an annual interest charge of $200,000,000.

Farmers produce against the competition of the world.

A general reduction of the duty on farm implements would not be a cure-all for our ills. Farmers have not proposed absolute free trade.

With the *burdens* of the tariff removed, Canada would be the cheapest place in the world to live in, instead of being the dearest.

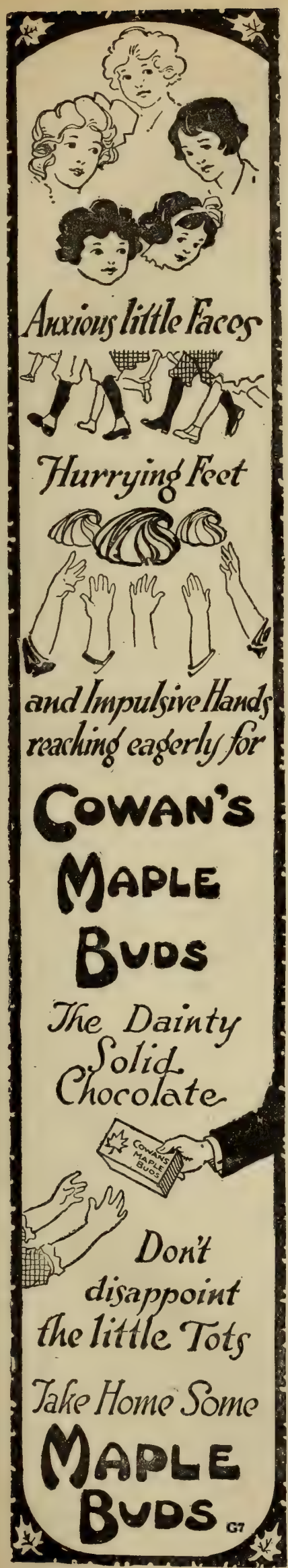
Why is not more food produced in Canada? Because half the people are attracted to the cities due to the tariff.

Reduce the cost of production in Canada, by cutting off the tariffs in cottons, pork, etc., so we can sell them as cheaply as in England.

If our industries were honestly capitalized, I believe they could compete with the world.

In 1909 cement dropped in price. Sir Max Aitken then formed his merger and the price rose to $2.00 and $42,000,000 went into watered stock. Sir Max was knighted.

Time and again we have asked for a conference of farmers, manufacturers and working men to investigate the high cost of production but the manufacturers have kept the head on the barrel.



MEMORIAL HALL FOR THE O.A.C., GUELPH

By Prof. Wade Toole

SERVICE has always been uppermost in the minds of students and ex-students of the Ontario Agricultural College, Guelph. When the Great War came, over seven hundred of the best of these men answered the call of their country and joined the armies of the Allies in humanity's fight to the finish against the horrible Hun and the unspeakable Turk. These men risked all that the ideals which they held most dear should not perish. They were willing to lay down their lives for their friends, and of the number who crossed to the blood-soaked fields of France and Flanders, who fought in Mesopotamia, in Africa, on the Eastern Front, or aboard His Majesty's ships on the high seas and in the Air Forces, one hundred, one in seven, are numbered in the lists of the "unreturning brave." They were in the thick of the fight. They acquitted themselves like men. They fought. They died. They won. They did their bit and their best to ensure permanent freedom for all. Their memory must be perpetuated. Students, ex-students, staff and friends of the Ontario Agricultural College and Macdonald Hall realize that they can never pay the debt they owe those who fought and died for them, but they see their duty clearly and will deem it a privilege to give till it hurts, that an appropriate memorial be erected to commemorate the lives and the deeds of the best of their brothers who stood between them and the Hun and cracked the "Kultur" of the Kaiser and his war lords.

It has been decided to build a Memorial Hall on the College campus and every student and ex-student of the College, and of Macdonald Hall, together with all those who have taken any of the Short Courses at the Institution and all friends of the College are asked to subscribe to the fund for the erection of this ornamental, yet useful, monument to the memory of our noble dead. A committee has already been formed with Dr. Creelman, President of the College, as chairman and treasurer, and Prof. D. H. Jones as secretary. The purpose is to erect an Assembly Hall to seat at least 800, the architecture of the cut stone building to be modified gothic in design with tower and chimes, the interior to be fitted with a large stage, pipe organ and everything which goes to complete a modern Assembly Hall.

The men who lie beneath the poppies in Flanders fields were big men. They accomplished a big task. They lost their lives that others might be saved. The saved must do their biggest and best in honor to our glorious dead. The building will cost $100,000 or more. The Ontario Government has voted $40,000 as their contribution to the cause. The committee in charge desire to raise, by popular subscription, the remainder of the money necessary to complete a building in which all of those in any way interested in the Ontario Agricultural College should have a part. This includes students, ex-students, graduates, staff, friends, and acquaintances. Every individual must play his part and by team-work, such as that shown by the boys who stemmed the tide of German field gray as it flowed toward Paris and the Channel Ports, the fund will go over the top and there will be erected a fitting memorial at the O.A.C., sacred to the memory of those who fell daring to do their duty and with the undying faith that Right would finally prevail.

Subscriptions should be sent to Dr. G. C. Creelman, treasurer Memorial Hall Fund, O.A.C., Guelph, Ont. Make them as large as possible. Affection should bind all together in this cause. Together O.A.C. and Macdonald Hall students and ex-students are strong. The committee requires the assistance of all in locating ex-students. Send in your donation and names and addresses of other ex-students, either of the regular or short courses.

The staff of the O.A.C. has already been canvassed and heads of departments are giving $100.00 each, Associate Professors $75.00 each, and Lecturers and Demonstrators $50.00 each.

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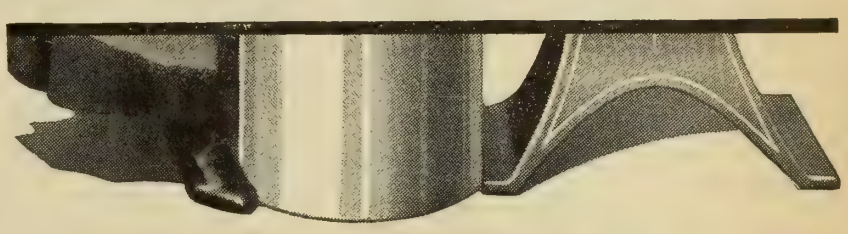

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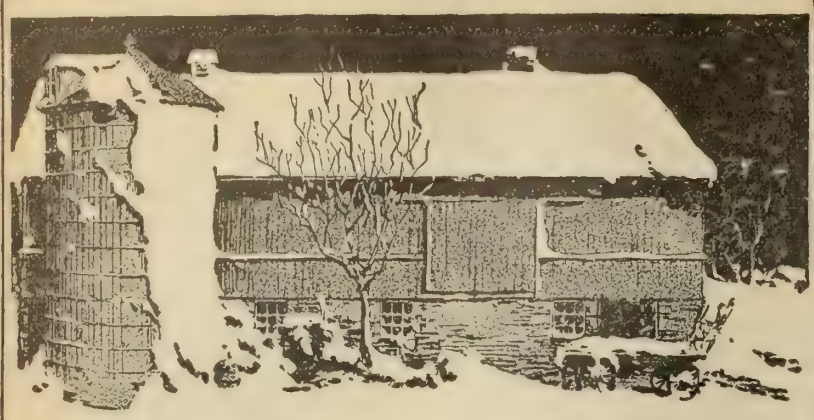

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

SYNOPSIS

Lin Slone, a wild-horse hunter, trails a magnificent, wild, red stallion — which he names Wildfire—for several months—from the Utah ranges across the Grand Canon of the Colorado. At last, when almost starving, he ropes the horse, but is thrown and hurt.

On the south side of the Grand Canon is a settlement called Bostil's Ford Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. He is very jealous of Creech, another rancher, who also owns some splendid horses. The annual races are soon to take place and Bostil fears that his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. It is now June and Creech has sent several urgent messages for the boat; Bostil, however, still delays. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has often sworn revenge. Cordts, a horse-thief, has also threatened to carry her off.

One day Lucy, riding alone in the desert, finds Slone lying helpless and renders him assistance. The next day she brings him food and clothes, but, at his request, says nothing about him at the Ford. Wildfire takes a fancy to Lucy and Slone agrees to let her ride him in the races. She comes in secret every day to train Wildfire, and just before the race day Slone declares his love for her.

CHAPTER XI

ALL through May there was an idea, dark and sinister, growing in Bostil's mind. Fiercely at first he had rejected it as utterly unworthy of the man he was. But it returned. It would not be denied. It was fostered by singular and unforeseen circumstances. The meetings with Creech, the strange, sneaking actions of young Joel Creech, and especially the gossip of riders about the improvements in Creech's swift horse—these things appeared to loom larger and larger and to augment in Bostil's mind the monstrous idea which he could not shake off. So he became brooding and gloomy.

It appeared to be an indication of his intense pre-occupation of mind that he seemed unaware of Lucy's long trips down into the sage. But Bostil had observed them long before Holley and other riders had approached him with the information.

"Let her alone," he growled to his men. "I gave her orders to train the King. An' after Van got well mebbe Lucy just had a habit of ridin' down there. She can take care of herself."

To himself, when alone, Bostil muttered: "Wonder what the kid has looked up now? Some mischief, I'll bet!"

Nevertheless, he did not speak to her on the subject. Deep in his heart he knew he feared his keen-eyed daughter, and during these days he was glad she was not in evidence at the hours when he could not very well keep entirely to himself. Bostil was afraid Lucy might divine what he had on his mind. There was no one else he cared for. Holley, that old hawk-eyed rider, might see through him, but Bostil knew Holley would be loyal, whatever he saw.

Toward the end of the month, when Somers returned from horse-hunting, Bostil put him and Shugrue to work upon the big flatboat down at the crossing. Bostil himself went down, and he walked—a fact apt to be considered unusual if it had been noticed.

"Put in new planks," was his order to the men. "An' pour hot tar in the cracks. Then when the tar dries shove her in . . . but I'll tell you when."

Every morning young Creech rowed over to see if the boat was ready to take the trip across to bring his father's horses back. The third morning of work on the boat Bostil met Joel down there. Joel seemed eager to speak to Bostil. He certainly was a wild-looking youth.

"Bostil, my ole man is losin' sleep waitin' to git the hosses over," he said, frankly. "Feed's almost gone."

"That'll be all right, Joel," replied Bostil. "You see, the river ain't begun to raise yet. . . . How're the hosses comin' on?"

"Grand, sir—grand!" exclaimed the simple Joel. "Peg is runnin' faster than last year, but Blue Roan is leavin' her a mile. Dad's goin' to bet all he has. The roan can't lose this year."

Bostil felt like a bull bayed at by a hound. Blue Roan was a young horse, and every season he had grown bigger and faster. The King had reached the limit of his speed. That was great, Bostil knew, and enough to win over any horse in the uplands, providing the luck of the race fell even. Luck, however, was a fickle thing.

"I was advisin' Dad to swim the hosses over," declared Joel, deliberately.

"A-huh! You was? . . . An' why?" rejoined Bostil.

Joel's simplicity and frankness vanished, and with them his rationality. He looked queer. His contrasting eyes shot little malignant gleams. He muttered incoherently, and moved back toward the skiff, making violent gestures, and his muttering grew to shouting, though still incoherent. He got in the boat and started to row back over the river.

"Sure he's got a screw loose," observed Somers.

Shugrue tapped his grizzled head significantly.

Bostil made no comment. He strode away from his men down to the river shore, and, finding a seat on a stone, he studied the slow eddying red current of the river and he listened. If any man knew the strange and remorseless Colorado, that man was Bostil. He never made any mistakes in anticipating what the river was going to do.

And now he listened, as if indeed the sullen, low roar, the murmuring hollow gurgle, the sudden strange splash, were spoken words meant for his ears alone. The river was low. It seemed tired out. It was a dirty red in color, and it swirled and flowed along lingeringly. At times the current was almost imperceptible; and then again it moved at varying speed. It seemed a petulant, waiting, yet inevitable stream, with some remorseless end before it. It had a thousand voices, but not the one Bostil listened to hear.

He plodded gloomily up the trail, resting in the quiet, dark places of the canon, loath to climb out into the clear light of day. And once in the village, Bostil shook himself as if to cast off an evil, ever-present, pressing spell.

The races were now only a few days off. Piutes and Navajos were camped out on the sage, and hourly the number grew as more came in. They were building cedar sunshades. Columns of blue smoke curled up here and there. Mustangs and ponies grazed everywhere, and a line of Indians extended along the racecourse, where trials were being held. The village was full of riders, horse-traders and hunters, and ranchers. Work on the ranges had practically stopped for the time being, and in another day or so every inhabitant of the country would be in Bostil's Ford.

Bostil walked into the village, grimly conscious that the presence of the Indians and riders and horses, the action and color and bustle, the near approach of the great race-day—these things that in former years had brought him keen delight and speculation—had somehow lost their tang. He had changed. Something was wrong in him. But he must go among these visitors and welcome them as of old; he who had always been the life of these racing-days must be outwardly the same. And the task was all the harder because of the pleasure shown by old friends among the Indians and the riders at meeting him. Bostil knew he had been a cunning horse-

trader, but he had likewise been a good friend. Many were the riders and Indians who owed much to him. So everywhere he was hailed and besieged, until finally the old excitement of betting and bantering took hold of him and he forgot his brooding.

Brackton's place, as always, was a headquarters for all visitors. Macomber had just come in full of enthusiasm and pride over the horse he had entered, and he had money to wager. Two Navajo chiefs, called by white men Old Horse and Silver, were there for the first time in years. They were ready to gamble horse against horse. Cal Blinn and his riders of Durango had arrived; likewise Colson, Sticks, and Burthwait, old friends and rivals of Bostil's.

For a while Brackton's was merry. There was some drinking and much betting. It was characteristic of Bostil that he would give any odds asked on the King in a race; and, furthermore, he would take any end of wagers on other horses. As far as his own horses were concerned he bet shrewdly, but in races where his horses did not figure he seemed to find fun in the betting, whether or not he won.

The fact remained, however, that there were only two wagers against the King, and both were put up by Indians. Macomber was betting on second or third place for his horse in the big race. No odds of Bostil's tempted him.

"Say, where's Wetherby?" rolled out Bostil. "He'll back his hoss."

"Wetherby's ridin' over to-morrow," replied Macomber. "But you gotta bet him two to one."

"See hyar, Bostil," spoke up old Cal Blinn, "you jest wait till I get an eye on the King's runnin'. Maybe I'll go you even money."

"An' as fer me, Bostil," said Colson, "I ain't set up yit which hoss I'll race."

Burthwait, an old rider, came forward to Brackton's desk and entered a wager against the field that made all the men gasp.

"By George! pard, you aint alimpin' along!" ejaculated Bostil, admiringly, and he put a hand on the other's shoulder.

"Bostil, I've a grand hoss," replied Burthwait. "He's four years old, I guess, for he was born wild, an' you never seen him."

"Wild hoss?...Huh!" growled Bostil. "You must think he can run."

"Why, Bostil, a streak of lightnin' ain't anywheres with him."

"Wal, I'm glad to hear it," said Bostil, gruffly. "Brack, how many hosses entered now for the big race?"

The lean, gray Brackton bent earnestly over his soiled ledger, while the riders and horsemen round him grew silent to listen.

"Thar's the Sage King, by Bostil," replied Brackton. "Blue Roan an' Peg, by Creech; Whitefoot, by Macomber; Rocks, by Holley; Hosshoes, by Blinn; Bay Charley, by Burthwait. Then thar's the two mustangs entered by Old Hoss an' Silver—an' last—Wildfire, by Lucy Bostil."

"What's thet last?" queried Bostil.

"Wildfire, by Lucy Bostil," repeated Brackton.

"Has the girl gone an' entered a hoss?"

"She sure has. She came in to-day, regular an' business-like, writ her name an' her hoss's—here 'tis—an' put up the entrance money."

"Wal, I'll be —!" explained Bostil. He was astonished and pleased. "She said she'd do it. But I didn't take no stock in her talk....An' the hoss' name?"

"Wildfire."

"Huh!...Wildfire. Mebbe thet girl can't think of names for hosses! What's this hoss she calls Wildfire?"

"She sure didn't say," replied Brackton. "Holley an' Van an' some more of the boys was here. They joked her a little. You oughter seen the look Lucy give them. But fer once she seemed mum. She jest walked away mysterious like."

"Lucy's got a pony of some Indian, I reckon," returned Bostil, and he laughed. "Then that makes ten horses entered so far?"

"Right. An' there's sure to be one

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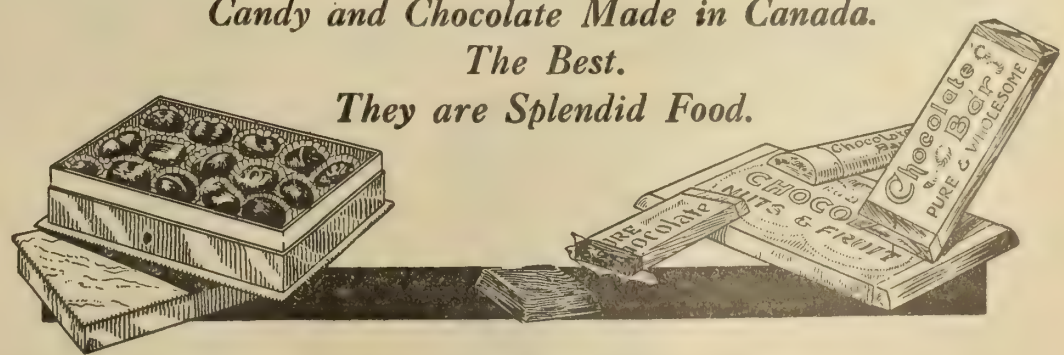

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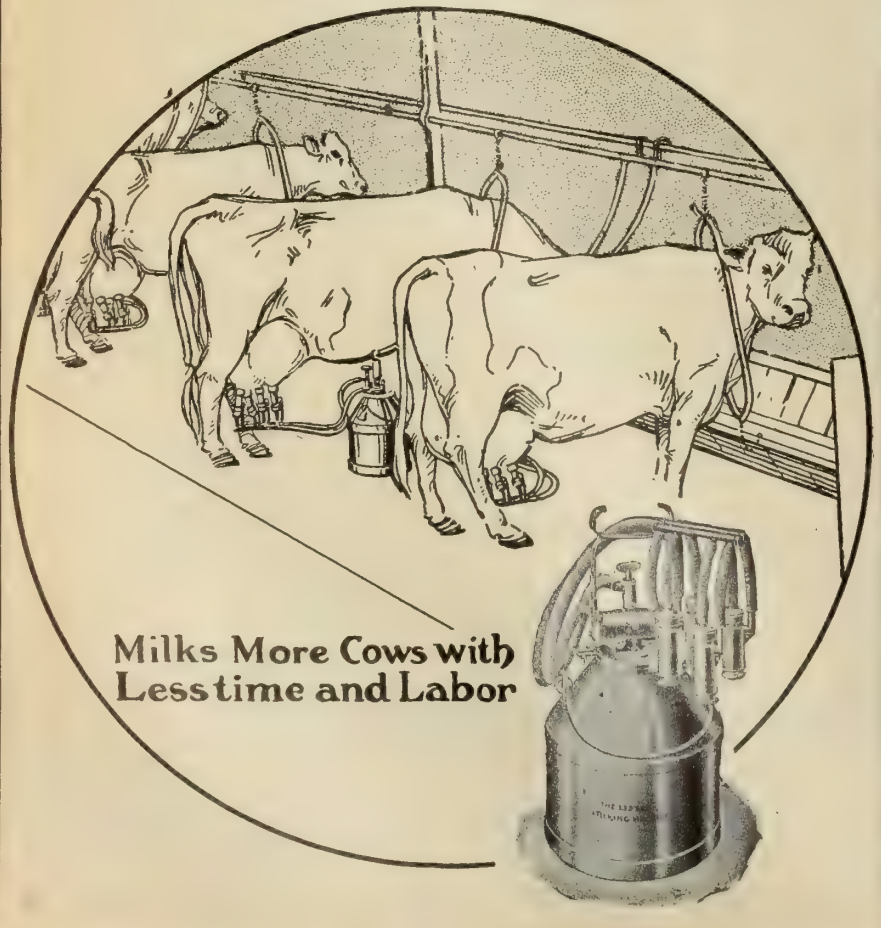


more. I guess the track's wide enough for twelve."

"Wal, Brack, there'll likely be one hoss out in front an' some stretched out behind," replied Bostil, dryly. "The track's sure wide enough."

"Won't thet be a grand race!" exclaimed an enthusiastic rider. "Wisht I had about a million to bet!"

"Bostil, I 'most forgot," went on Brackton, "Cordts sent word by the Piutes who come to-day thet he'd be here sure."

Bostil's face subtly changed. The light seemed to leave it. He did not reply to Brackton—did not show that he heard the comment on all sides. Public opinion was against Bostil's permission to allow Cordts and his horse-thieves to attend the races. Bostil appeared grave, regretful. Yet it was known by all that in the strangeness and perversity of his rider's nature he wanted Cordts to see King win that race. It was his rider's vanity and defiance in the teeth of a horse-thief. But no good would come of Cordts's presence—that much was manifest.

There was a moment of silence. All these men, if they did not fear Bostil, were sometimes uneasy when near him. Some who were more reckless than discreet liked to irritate him. That, too, was a rider's weakness.

"When's Creech's hosses comin' over?" asked Colson, with sudden interest.

"Wal, I reckon—soon," replied Bostil, constrainedly, and he turned away.

By the time he got home all the excitement of the past hour had left him and gloom again abided in his mind. He avoided his daughter and forgot the fact of her entering a horse without speaking to his sister. Then in the dusk he went out to the corrals and called the King to the fence. There was love betwnen master and horse. Bostil talked low, like a woman, to Sage King. And the hard old rider's heart was full and a lump swelled in his throat, for contact with the King reminded him that other men loved other horses.

Bostil returned to the house and went to his room, where he sat thinking in the dark. By and by all was quiet. Then seemingly with a wrench he bestirred himself and did what for him was a strange action. Removing his boots, he put on a pair of moccasins. He slipped out of the house; he kept to the flagstone of the walk; he took to the sage till out of the village, and then he sheered round to the river trail. With the step and sureness and the eyes of an Indian he went down through that pitch-black canon to the river and the ford.

The river seemed absolutely the same as during the day. He peered through the dark opaqueness of gloom. It moved there, the river he knew, shadowy, mysterious, murmuring. Bostil went down to the edge of the water, and, sitting there, he listened. Yes—the voices of the stream were the same. But after a long time he imagined there was among them an infinitely low voice, as if from a great distance. He imagined this; he doubted; made sure; and then all seemed fancy again. His mind held one idea and was riveted round it. He strained his hearing, so long, so intently, that at last he knew he had heard what he was longing for. Then in the gloom he took the trail, and returned home as he had left, stealthily, like an Indian.

But Bostil did not sleep nor rest.

Next morning early he rode down to the river. Somers and Shugrue had finished the boat and were waiting. Other men were there, curious and eager. Joel Creech, barefooted and ragged, with hollow eyes and strange actions, paced the sands.

The boat was lying bottom up. Bostil examined the new planking and the seams. Then he straightened his form.

"Turn her over," he ordered. "Shove her in. An' let her soak up to-day."

The men seemed glad and relieved. Joel Creech heard and he came near to Bostil.

"You'll—you'll fetch Dad's hosses over?" he queried.

"Sure. To-morrow," replied Bostil, cheerily.

Joel smiled, and that smile showed what might have been possible for him under kinder conditions of life.

"Now, Bostil, I'm sorry for what I said," blurted Joel.

"Shut up. Go tell your old man."

Joel ran down to his skiff and, leaping in, began to row vigorously across. Bostil watched while the workmen turned the boat over and slid it off the sand-bar and tied it securely to the mooring. Bostil observed that not a man there saw anything unusual about the river. But, for that matter, there was nothing to see. The river was the same.

That night when all was quiet in and around the village Bostil emerged from his house and took to his stealthy stalk down to the river.

The moment he got out into the night oppression left him. How interminable the hours had been! Suspense, doubt, anxiety, no longer burdened him. The night was dark, with only a few stars, and the air was cool. A soft wind blew across his heated face. A neighbor's dog, baying dismally, startled Bostil. He halted to listen, then stole on under the cottonwoods, through the sage, down the trail, into the jet-black canon. Yet he found his way as if it had been light. In the darkness of his room he had been a slave to his indecision; now in the darkness of the looming cliffs he was free, resolved, immutable.

The distance seemed short. He passed out of the narrow canon, skirted the gorge over the river, and hurried down into the shadowy amphitheater under the looming walls.

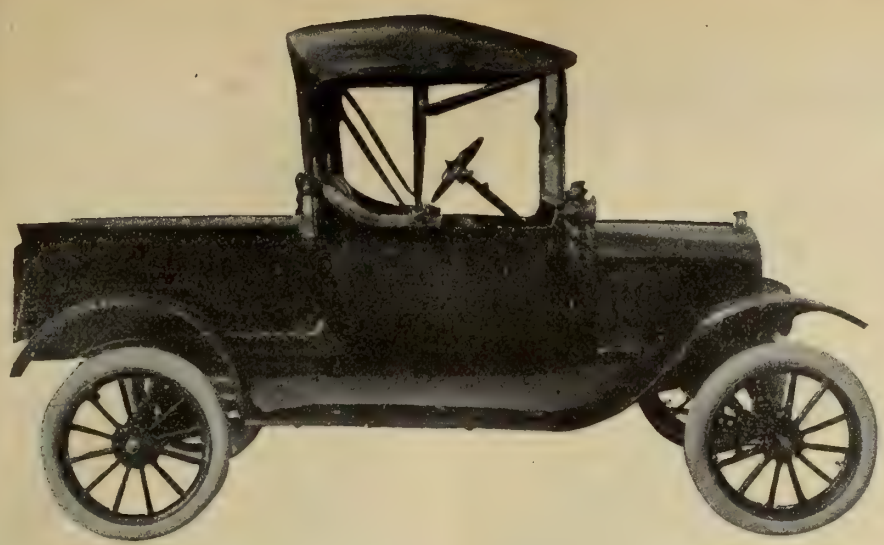
The boat lay at the mooring, one end resting lightly on the sand-bar. With strong, nervous clutch Bostil felt the knots of the cables. Then he peered into the opaque gloom of that strange and huge V-shaped split between the great canon walls. Bostil's mind had begun to relax from the single idea. Was he alone? Except for the low murmur of the river there was dead silence—a silence like no other—a silence which seemed held under imprisoning walls. Yet Bostil peered long into the shadows. Then he looked up. The ragged ramparts far above frowned bold and black at a few cold stars, and the blue of its sky was without the usual velvety brightness. How far it was up that corrugated rim! All of a sudden Bostil hated this vast ebony pit.

He strode down to the water and, sitting upon the stone he had occupied so often, he listened. He turned his ear up-stream, then down-stream, and to the side, and again up-stream and listened.

The river seemed the same.

It was slow, heavy, listless, eddying, lingering, moving—the same apparently as for days past. It splashed very softly and murmured low and gurgled faintly. It gave forth fitful little swishes and musical tinkles and lapping sounds. It was flowing water, yet the proof was there of tardiness. Now it was almost still, and then again it moved on. It was a river of mystery telling a lie with its low music. As Bostil listened all those soft, watery sounds merged into what seemed a moaning, and that moaning held a roar so low as to be only distinguishable to the ear trained by years.

No—the river was not the same. For the voice of its soft moaning showed to Bostil its meaning. It called from the far north—the north of great ice-clad peaks beginning to glisten under the nearing sun; of vast snow-filled canons dripping and melting; of the crystal brooks suddenly colored and roiled and filled bank-full along the mountain meadows; of many brooks



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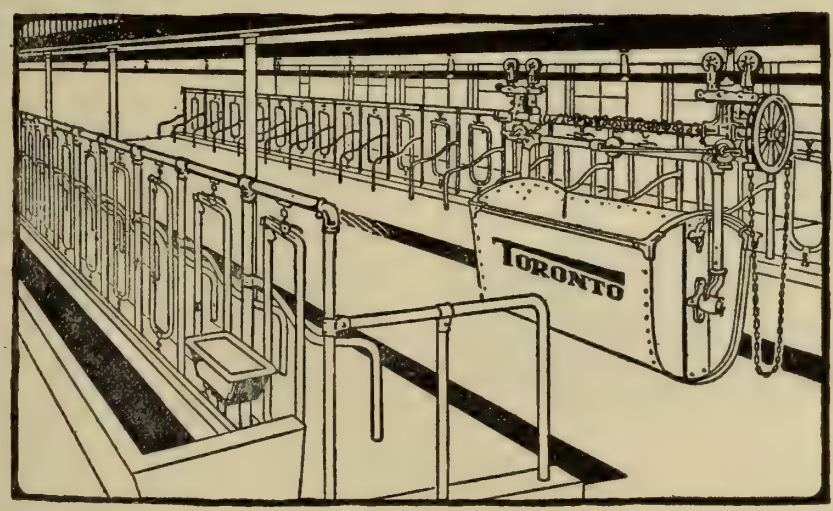

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Means Greater Profit

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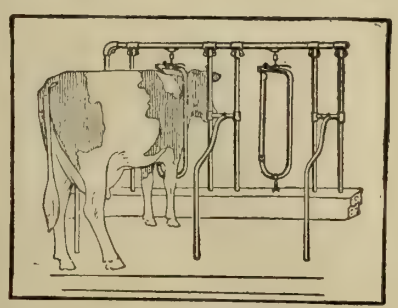

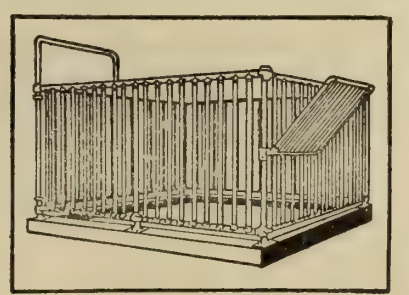

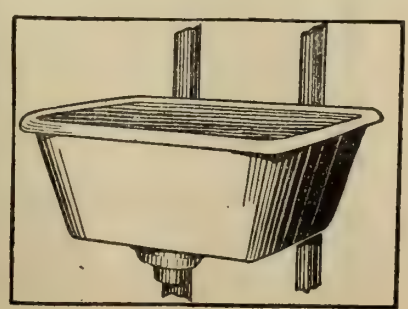

Toronto Stalls, by making your stable more sanitary and comfortable for the cattle, will increase milk production. There are no solid partitions to keep out daylight or secrete vermin. Stables are more easily cleaned and easy to keep clean with Toronto Stalls.

Toronto Litter Carriers are great time savers. All the unpleasantness of stable cleaning is done away with. With the steel tub there is no dripping or splashing. Carries manure any distance from stables. One man can easily do the work of three with a Toronto Litter Carrier.

Toronto Stanchions are a great improvement over ordinary stanchions. They not only hold the cow in place, but give her practically complete freedom. They are easily removed both top and bottom.

Every stable should be equipped with Toronto Water Bowls. If your cattle are to pay, fresh water should be continually within reach. The shape and size of Toronto Water Bowls permits easy access. They are built to withstand the greatest strain.

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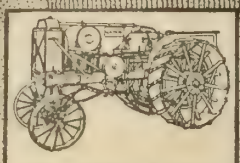

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(Recommended by many tractor manufacturers)

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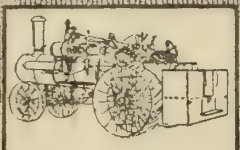

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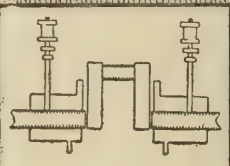
—the standard product for steam cylinder lubrication



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There is no all-round lubricant. There is an Imperial Lubricant made especially for each need. A few recommendations are mentioned in the panels at the left.

All Imperial Lubricants can be promptly supplied in a size suited to your needs. They come in half gallon, one gallon and and four gallon sealed cans, in half barrels and barrels.

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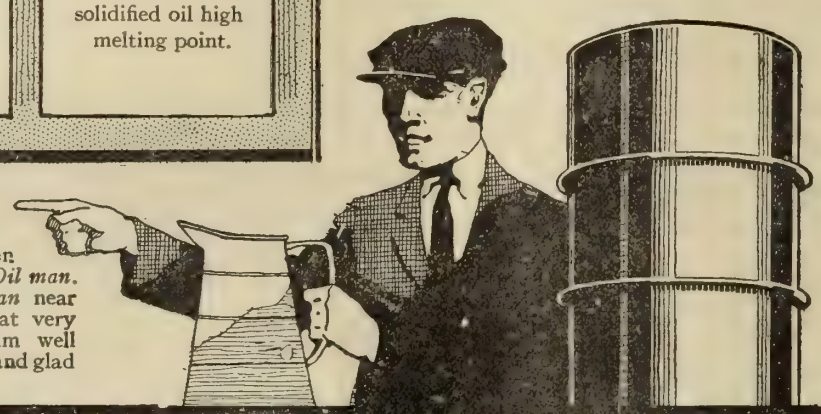
Talk over your lubrication needs with the *Imperial Oil man*. There is an *Imperial Oil man* near you and he is there for that very thing. You will find him well posted on farm lubrication and glad to be of service to you.



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THE CALVACURA METHOD is a scientific, natural method, invariably producing gratifying results.

MRS. LINA BELPERIO, whose photograph appears here, sent us a very interesting sworn statement of the remarkable results she and her children obtained from the Calvacura Method. We would like to send you a copy of this statement.

MRS. JOHN MALOUIN writes: "The sample box started a growth of new hair and I am so pleased I am sending for a full treatment."

MR. FRANK H. WRIGHT says: "Your Calvacura No. 1 cured me, also my brother-in-law, and I can recommend it to any one."

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DELAYS ARE DANGEROUS.—If you suffer from any of the hair troubles mentioned above do not neglect it, try to relieve the trouble at once. Let us send you our illustrated book, "The Triumph of Science Over Baldness," and a liberal sample of Calvacura.

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Successful Scientific Treatment

SIMPLE TEST.—If you find hairs adhere to your comb, examine them closely. If the root is pale, dry, dead looking, take warning; correct the trouble if you want to save your hair and make it grow.

LET US PROVE to you by sending you a SAMPLE TREATMENT that the Calvacura Natural Method of Hair Culture stops the falling of hair, driving away dandruff and eczema of the scalp and promotes the growth of new hair. We will send a liberal sample of Calvacura No. 1 and our illustrated book on the care of the hair and scalp, if you will write your name and address plainly on a piece of paper and enclose it with ten cents in silver or stamps as evidence of your good faith, in an envelope addressed UNION LABORATORY.

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plunging down and down, rolling the rocks, to pour their volume into the growing turbid streams on the slopes. It was the voice of all that widely separated water spilled suddenly with magical power into the desert river to make it a mighty, thundering torrent, red and defiled, terible in its increasing onslaught into the canon, deep, ponderous, but swift—the Colorado in flood.

And as Bostil heard that voice he trembled. What was the thing he meant to do? A thousand thoughts assailed him in answer and none were clear. A chill passed over him. Suddenly he felt that the cold stole up from his feet. They were both in the water. He pulled them out, and bending down, watched the dim, dark line of water. It moved up and up, inch by inch, swiftly. The river was on the rise!

Bostil leaped up. He seemed possessed of devils. A rippling hot gush of blood fired his every vein and tremor after tremor shook him.

"By G—d! I had it right—she's risin'!" he exclaimed, hoarsely.

He stared in fascinated certainty at the river. All about it and pertaining to it had changed. The murmur and moan changed to a low, sullen roar. The music was gone. The current chafed at its rock-bound confines. Here was an uneasy, tormented, driven river! The light from the stars shone on dark, glancing, restless waters, uneven and strange. And while Bostil watched, whether it was a short time or long, the remorseless, destructive nature of the river showed itself.

Bostil began to pace the sands. He thought of those beautiful race-horses across the river.

"It's not too late!" he muttered. "I can get the boat over an' back—yet!"

He knew that on the morrow the Colorado in flood would bar those horses, imprison them in a barren canon, shut them in to starve.

"It'd be hellish!...Bostil, you can't do it. You ain't thet kind of a man.... Bostil poison a water-hole where hosses loved to drink, or burn over grass!...What would Lucy think of you?...No, Bostil, you've let spite rule bad. Hurry now and save them hosses!"

He strode down to the boat. It swung clear now, and there was water between it and the shore. Bostil laid hold of the cables. As he did so he thought of Creech and a blackness enfolded him. He forgot Creech's horses. Something gripped him, burned him—some hard and bitter feeling which he thought was hate of Creech. Again the wave of fire ran over him, and his huge hands strained on the cables. The fiend of that fiendish river had entered his soul. He meant to ruin a man. He meant more than ruin. He meant to destroy what his enemy, his rival loved. The darkness all about him, the gloom and sinister shadow of the canon, the sullen increasing roar of the river—those lent their influence to the deed, encouraged him, drove him onward, fought and strangled the resistance in his heart. As he brooded all the motives for the deed grew like that remorseless river. Had not his enemy's son shot at him from ambush? Was not his very fate at stake? A terrible blow must be dealt Creech, one that would crush him or else lend him manhood enough to come forth with a gun. Bostil, in his torment, divined that Creech would know who had ruined him. They would meet then, as Bostil had tried more than once to bring about a meeting. Bostil saw into his soul, and it was a gulf like this canon pit where the dark and sullen river raged. He shrank at what he saw, but the furies of passion held him fast. His hands tore at the cables. Then he fell to pacing to and fro in the gloom. Every moment the river changed its voice. In an hour flood would be down. Too late, then! Bostil again remembered the sleek, slim, racy thoroughbreds — Blue Roan, a wild horse he had longed to own, and Peg, a mare that had no equal in the uplands. Where did Bostil's hate of a

man stand in comparison with love of a horse? He began to sweat and the sweat burned him.

"How soon 'll Creech hear the river an' know what's comin'?" muttered Bostil, darkly. And that question showed him how he was lost. All this strife of doubt and fear and horror were of no use. He meant to doom Creech's horses. The thing had been unalterable from the inception of the insidious, hateful idea. It was irresistible. He grew strong, hard, fierce, and implacable. He found himself. He strode back to the cables. The knots, having dragged in the water, were soaking wet and swollen. He could not untie them. Then he cut one strand after another. The boat swung out beyond his reach.

Instinctively Bostil reached to pull it back.

"My God!...It's goin!" he whispered. "What have I done?"

He—Bostil—who had made this Crossing of the Fathers more famous as Bostil's Ford—he—to cut the boat adrift! The thing was inconceivable.

The roar of the river rose weird and mournful and incessant, with few breaks, and these were marked by strange rippling and splashing sounds made as the bulges of water broke on the surface. Twenty feet out the boat floated turning a little as it drifted. It seemed loath to leave. It held on the shore eddy. Hungrily, spitefully the little, heavy waves lapped it. Bostil watched it with dilating eyes. There! the current caught one end and the water rose in a hollow splash over the corner. An invisible hand, like a mighty giant's, seemed to swing the boat out. It had been dark; now it was opaque, now shadowy, now dim. How swift this cursed river! Was there any way in which Bostil could recover his boat? The river answered him with hollow, deep mockery. Despair seized upon him. And the vague shape of the boat, spectral and instinct with meaning, passed from Bostil's strained gaze.

"So help me God, I've done it!" he groaned, hoarsely. And he staggered back and sat down. Mind and heart and soul were suddenly and exquisitely acute to the shame of his act. Remorse seized upon his vitals. He suffered physical agony, as if a wolf gnawed him internally.

"To hell with Creech an' his hosses, but where do I come in as a man?" he whispered. And he sat there, arms tight around his knees, locked both mentally and physically into inaction.

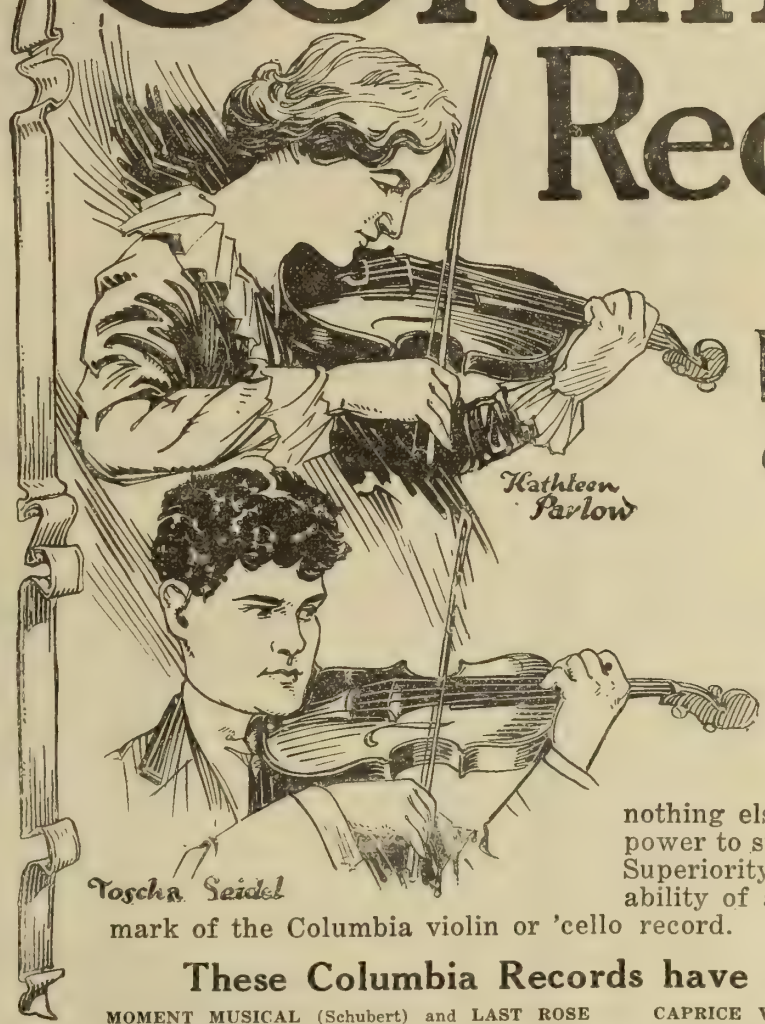
The rising water broke the spell and drove him back. The river was creeping no longer. It swelled. And the roar likewise swelled. Bostil hurried across the flat to get to the rocky trail before he was cut off, and the last few rods he waded in water up to his knees.

"I'll leave no trail there," he muttered, with a hard laugh. It sounded ghastly to him, like the laugh of the river.

And there at the foot of the rocky trail he halted to watch and listen. The old memorable boom came to his ears. The flood was coming. For twenty-three years he had heard the vanguard boom of the Colorado in flood. But never like this, for in the sound he heard the strife and passion of his blood, and realized himself a human counterpart of that remorseless river. The moments passed and each one saw a swelling of the volume of sound. The sullen roar just below him was gradually lost in a distant roar. A steady wind now blew through the canon. The great walls seemed to gape wider to prepare for the torrent. Bostil backed slowly up the trail as foot by foot the water rose. The floor of the amphitheater was now a lake of choppy, angry waves. The willows bent and seethed in the edge of the current. Beyond ran an uneven, bulging mass that resembled some gray, heavy moving monster. In the gloom Bostil could see how the river turned a corner of wall and slanted away from it toward the centre, where it rose higher. Black objects that must have been driftwood

Continued on page 32

Columbia Records



The Wonders of Violin Music

Most subtle, most delicate, most fascinating of all instruments is the violin. Next only to the human voice itself has it power to express the fires of emotion. To nothing else in music does it yield in power to sway, to thrill and to charm. Superiority, in recording and in the ability of artist employed, is the hall mark of the Columbia violin or 'cello record.

These Columbia Records have limitless artistry

MOMENT MUSICAL (Schubert) and **LAST ROSE OF SUMMER**, Kathleen Parlow, violinist. *A2121, 10-inch $1.00*

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EILEEN ALANNAH, and **MY LOVE IS LIKE A RED, RED ROSE**, Mackenzie Murdock, violinist. *A1786, 10-inch 90c.*

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MINUET and **SOUVENIR**, Frank Gittelson, violinist. *A2186, 10-inch $1.00.*

HUMORESQUE, Opus 101, No. 7 (Dvorak) and **MELODIE**, Opus 42, No. 3 (Tschaikowsky), Kathleen Parlow, violinist. *A5412, 12-inch $1.50.*

CAPRICE BASQUE (de Sarasate), and **NOCTURNE IN E MINOR**, Opus 72 (Chopin-Auer), Eddy Brown, violinist. *A5810, 12-inch $1.50*

CAPRICE VIENNOIS, Opus 2 (Kreisler), Eugene Ysaye, violinist. *36525, 12-inch $1.50.*

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TRAUMEREI (Dreaming) (Schumann), Toscha Seidel, violinist. *77899, 10-inch $1.00.*

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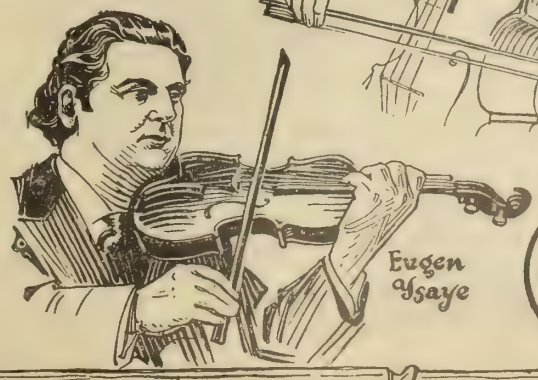

Columbia Grafonola

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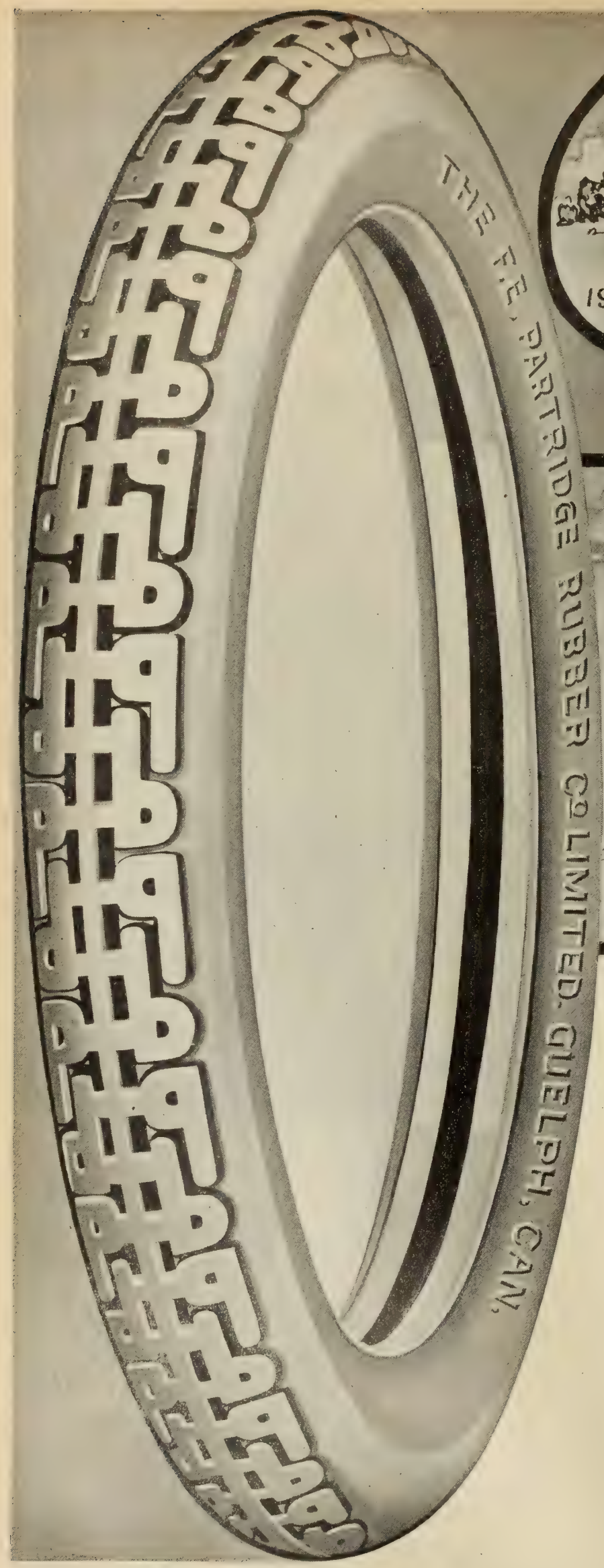

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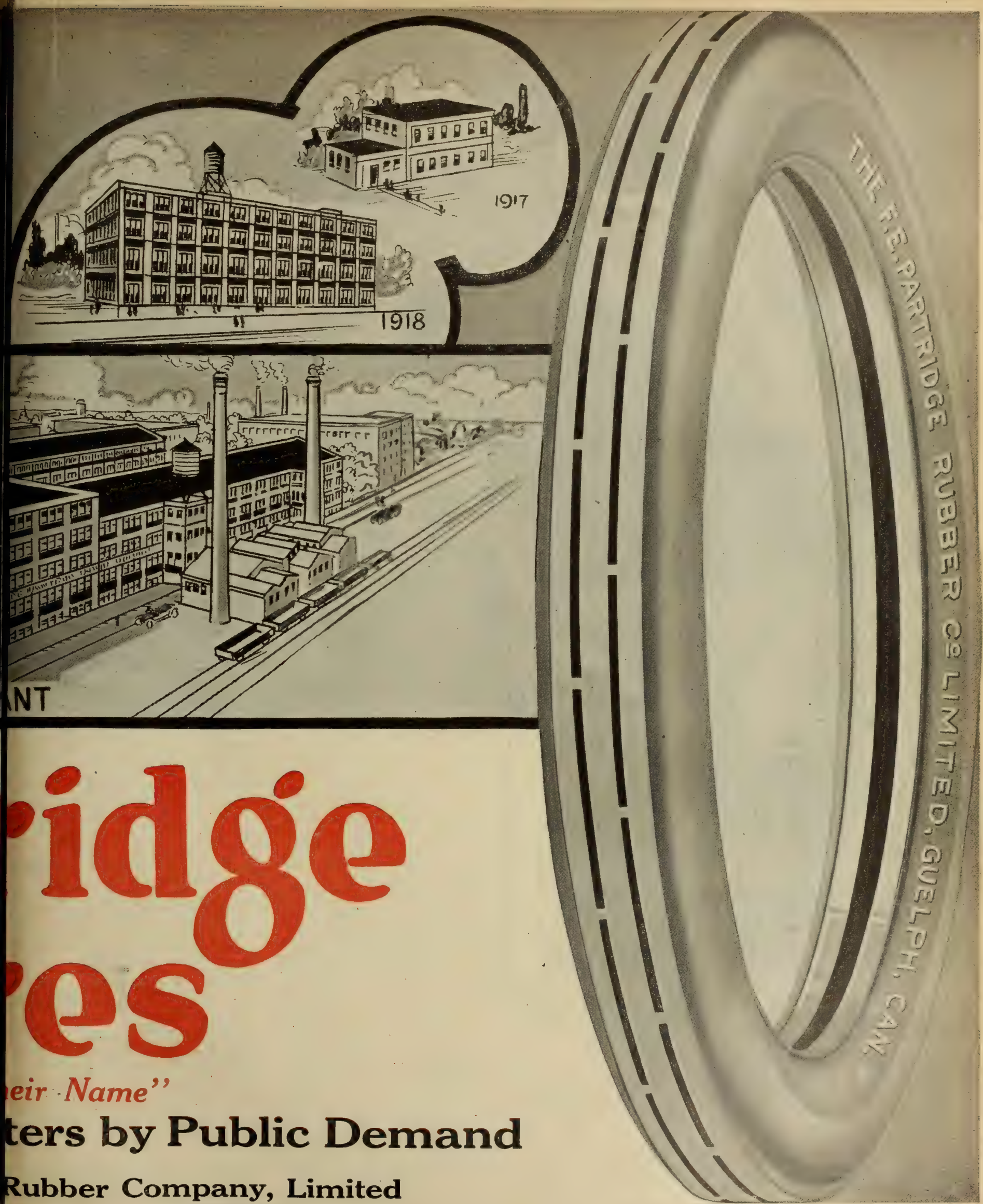
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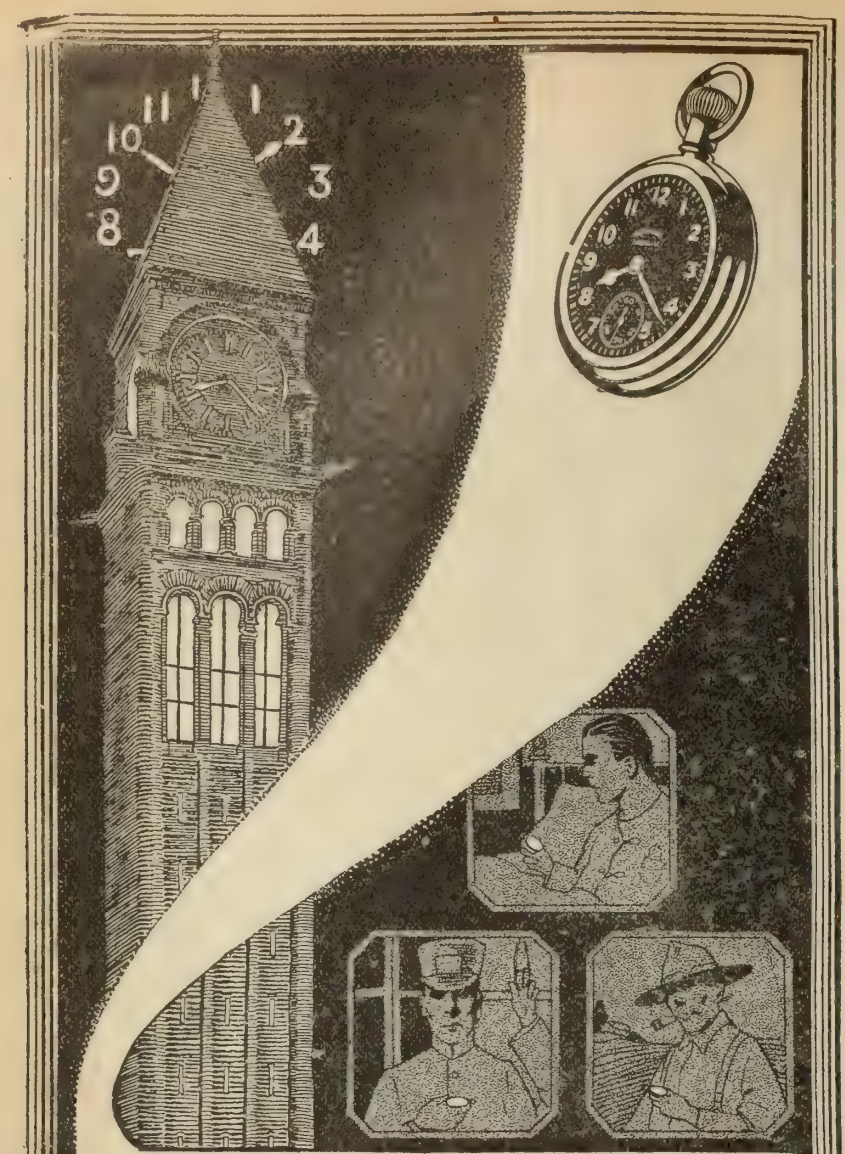

Night-Time Time-Pieces

THE movement for the electric clock in the Toronto City Hall was brought over from England 21 years ago. It cost *thousands of dollars*. And it showed time in the dark.

About the same time very wealthy men were carrying in their pockets another kind of a time-in-the-dark time-piece—a watch that sounded the time for them on a tiny gong when they "pressed the button." This striking watch was known as a "repeater" and cost from **$150.00 up.**

Now you can buy a guaranteed Ingersoll Radiolite, the modern time-in-the-dark time-piece, for as low as **$3.00.** Instead of the old exasperating striking mechanism to *sound* the time, the Ingersoll Radiolite *glows* the time. Genuine radium in the substance on the figures and hands does it.

It's the watch for up-to-the-minute-men, the leaders, the kind of men who get things before the crowd knows they are a necessity. The retailer has a complete line, including the $3 model pictured above. Now is the time to select. Look for INGERSOLL on the dial.

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Tells Time in the Dark

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THE GILSON SILO FILLER is the one blower which can be successfully operated with as little power as 4 h.p. There is a Gilson Silo Filler for every purpose—for the individual farmer, for the syndicate, and our large capacity machine for the custom jobber.

We guarantee every Gilson Silo Filler to cut and elevate more ensilage with the same power than any other blower cutter.

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Write for catalogue to-day.

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Note the Bow-Lever

Here's the best Churn you ever saw in any dairy. It's the easiest-running because of its roller-bearings: handiest to work because of its unique adjustable handle; and gives such splendid results that it is used everywhere, and Government Inspectors say it's the finest butter-maker in the world. Made in 8 sizes, of selected oak (does not chill), with light, strong, steel frame. Ask your dealer.

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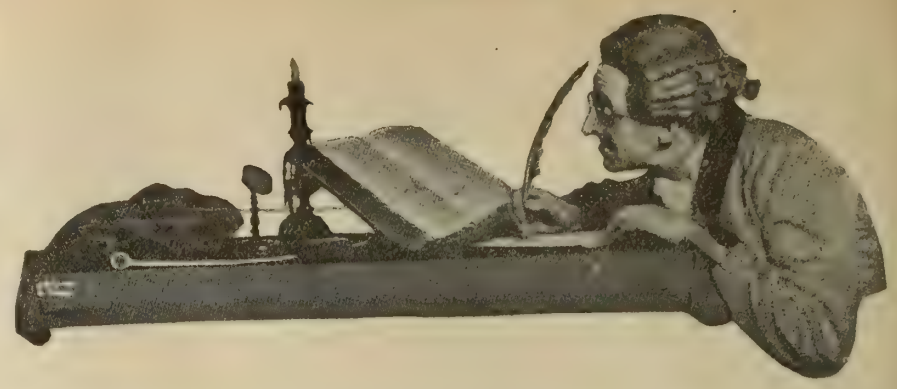
Some Every-Day Laws for Women

By GENEVIEVE



IT was a gathering of women whose minds and hands had been pretty busy with war work for four years who assembled to hear something about what they could do now. They had not been indifferent to the changes flapping past in the great world movie. They knew that the coming of peace had brought new responsibilities, and they were taking them seriously. One of the most definite of these responsibilities was to vote aright at the coming election. It was all right to think for themselves, to make their own decisions, but it was just as important to get as much light as possible before making these decisions. So they had come to listen to a woman with a legal mind, Mrs. Edith Hollington Lang, who had spent some time digging up and culling out from dusty old law books and bulletins and blue books, the things most important for the woman citizen to know.

For a long time back these women had had some general vague ideas of what the influence of the woman's vote would mean, when the opportunity came. Now that a woman's franchise bill had been passed they began to wonder just what women could vote, what special qualifications were necessary to entitle them to vote in the Dominion, provincial, and municipal elections and in the coming referendum on the liquor question. They were told that any woman could vote in the Dominion election if she were twenty-one years old, had lived in Canada for one year and in the electoral district for three months and was a British subject. In the provinces requiring property qualifications she would pass if her father or mother, or, if she were married, her husband had the necessary property or income. The question of whether or not she was a British subject was easily settled since a woman takes her father's nationality until she is married and after that her husband's—a regulation which some women have resented a little, especially the country-loving British woman who happened to have married a German before the war,

Any woman in Ontario can vote in the provincial election provided she is twenty-one years old, a British subject, has lived in Canada for one year and in the electoral district for three months. For municipal elections she must, if she is a married woman or a widow, in addition to these qualifications, pay taxes on property or on an income. A farmer's son or daughter can vote on their father's property. *No such provision has been made for the farmer's wife.* Her only resource is to get her husband to deed over to her a part of the farm or some other property in the district. Failing that she has no vote in the municipal election. A farmer's wife or daughter may be made a member of the school board whether she owns property or not.

But no woman can vote in any election if her name is not on the voters' list. Every woman is about certain to be called upon by a canvasser when the lists are being made up, but in addition to this the only way of being sure her name is on the list is to see for herself. The lists are posted up in public places and can be seen at the post-office or the school. There is no need to worry about getting a name on the provincial list until an election is in sight, when the Lieutenant-Governor will order a new list prepared. Again a canvasser will call but it is the individual woman's duty to see that her name is on. The Dominion voters' lists are prepared from the provincial lists.

THE vote on the liquor question will not take place until sometime after the boys have all returned from overseas, probably early in the fall. The people qualified to vote are all men and women over twenty-one years of age, who are British subjects, and have lived in Canada one year and in the district three months. To the inexperienced voter the ballot to be used here may be rather confusing. Four questions are asked and if all four are not voted on the ballot is spoiled.

The first question is: "Are you in favor of the repeal of the Ontario Temperance Act?"

The Ontario Temperance Act states that "No person may have, give or sell liquor in Ontario except in his private house," and that "No person may drink liquor in any place where it may not be lawfully kept, nor on the premises of a manufacturer, druggist, dentist, licensed vendor or in transit from one place to another, nor in such places as it is allowed for mechanical, scientific, medicinal or sacramental purposes." This act defines intoxicating liquor as "liquor containing more than 2½ per cent. proof spirits." The act provides that liquor may not be given to children without a doctor's prescription, and that anyone may ask the Medical Health Officer to have a patent medicine analyzed and if there is not sufficient medication to prevent it from being used as a beverage, the Health Officer shall certify, or if the medication is harmful the sale may be stopped. The voter who is a prohibitionist will vote "No" to this question.

The second is: "Would you be in favor of the sale of light beer of 2½ per cent. alcohol by weight, by Government agencies?" It is possible that the 2½ per cent. of alcohol by weight may be confused with the 2½ per cent. proof spirits of the beverages sold under the Temperance Act. Liquor containing 2½ per cent. alcohol by weight is about double the strength of the 2½ per cent. proof spirits liquor. Again the prohibitionist will vote "No."

The third question is: "Are you in favor of this stronger beer in hotels if the people of the municipality want it?" (In a district which had been under local option, the bylaw could not be repealed for two years). This is obviously a question to which a prohibitionist would vote "No."

The last question is: "Are you in favor of the sale of beer, spirits and wine by Government agencies?"—which would also not appeal to the prohibitionist.

After all there is nothing in this questionnaire to trouble the most inexperienced voter. If her sympathies are with the prohibition of the liquor traffic she will simply vote "No" to all four questions.

THE speaker drew the women's attention to some rather startling features in the Ontario Criminal Code. It didn't seem just consistent, for instance, that while a girl was not considered capable of taking care of her own property

until she was twenty-one, she was supposed to have a woman's judgment in looking after herself at fourteen. It was not news to the gathering either that when the National Council of Women succeeded in getting a bill put through the House of Commons to raise the age of consent from fourteen to eighteen years, the bill was turned down by the Senate, and the Commons didn't send it back for a second reading. It was not so well known perhaps that the only other countries with an age of consent as low as Canada's are Germany and Austria. Our criminal laws are surprisingly lax compared with our property laws. The price of the honor of a girl between fourteen and sixteen years is two years' imprisonment; the penalty for stealing drift lumber from a stream is three years' imprisonment; for stealing a cow the penalty is fourteen years. If a girl of less than twenty-one years is seduced by an employer, the employer may be sentenced to two year's imprisonment; if an employee steals from an employer the penalty may be fourteen years' imprisonment.

Another thing which the women resented a little was the law governing the co-guardianship of children. It didn't seem, to say the least, at all magnanimous to the mothers of the country that a father could actually will his children away from their mother—as was done recently by a Chinaman who had married an English girl and at his death had the children sent to his Chinese mother—nor that the father should necessarily have first claim to his children in case of a separation.

There were other questions brought up in the discussion of the laws especially affecting women and children and the homes and social life of the country, and there were some stirrings of anger, which was a good thing, and one faint little protest that the speaker should "dig up such mud." Most of the women, however, felt that if they had to live with these conditions they might as well know about them. They had rather the attitude explained by Nellie McClung in the story of the woman whose husband brought her, as a bride, to his house and said:

"Now my dear, this house is very dirty. I can't clean it up and it's certainly too dirty for you to try—but you just stay upstairs and use your smelling salts and think no evil." But the woman replied: "John, you're all right, but sometimes your brain skids. Perhaps you'd better not come home for lunch to-day, but on your way to the office call at the store and send me up some —— cleanser and a can of —— lye and a scrub-brush and hurry."

With a spirit like that, and the organized effort of all the women, it would be a pretty bad place that couldn't be made fairly livable.

POTATOES IN ONTARIO

REPRESENTATIVE farmers in eighteen potato-growing counties of Ontario are being chosen this spring to carry out a new series of potato experiments as part of the campaign of standardization carried on in the Province during the past two or three years with Green Mountain and Irish Cobbler potatoes. The plan this year is to give the farmers of the various counties a practical demonstration of the results from planting certified seed. The selected farmers, perhaps four or five in each county, will be supplied with sufficient certified Green Mountain or Irish Cobbler seed to plant about one-fifth of an acre. They will be asked to plant in plots adjoining their main potato fields and to give them exactly the same attention that is given the ordinary stock. In the fall the crops from the certified and the ordinary seed will be weighed.

The counties in which the experiment will be made with late potatoes are: Carleton, Dundas, Grenville, Ontario, York, Middlesex, Huron, Durham, Norfolk, Peel, Dufferin, Wellington, Halton and Wentworth. Early potatoes will be planted in Essex, Kent and Lambton.

HOT PANCAKES!

Yes, But -- What are pancakes worth without syrup? It is the syrup that gives the flavour; and there is no other syrup that tastes just as good as

CROWN BRAND
CORN SYRUP

For hot pancakes, hot biscuits and muffins, and a dozen other Table and Kitchen uses, housewives with the widest experience use Crown Brand, every time—the golden syrup with the cane flavor.

For Marmalade and other preserves, we recommend our LILY WHITE Corn Syrup.

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Sold by Grocers everywhere in 2, 5, 10 and 20 pound tins.

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Cream Wanted

We are in the market for cream all through the year. We pay HIGHEST market price. Our plant is right up-to-date. In business since 1905. Drop us a postcard for particulars.

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Economy

The difference in cost between an ordinary baking powder and the pure, strong, ***double-acting***

EGG-O Baking Powder

is trivial. It amounts to only a fraction of a cent on each cake you bake. Against this you risk your high-priced flour, butter, sugar, eggs and milk, and your reputation as a cook.

Spoiled bakings not only cost you money, but they waste food. With the heavy Government Standard flours in use to-day, the selection of a strong baking powder is absolutely necessary.

The double-acting strength of Egg-O is needed to make a baking of a light cake from a heavy flour. Try a can and watch your bakings improve. You can use sweet milk, sour milk, buttermilk or water with Egg-O —a different and better baking powder.

Egg-O Baking Powder Co., Limited
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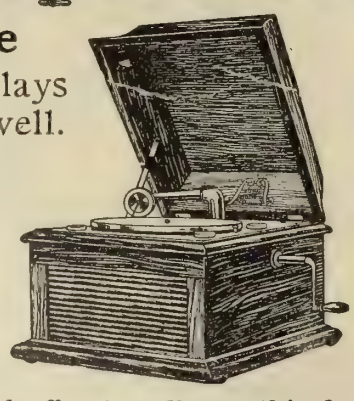

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Write to-day and get our special offer to sell you this fine talking machine and supply you absolutely free of all charge.

With Records For One Year

The machine illustrated above can be secured for as little as $5.00 down, and the balance payable on easy instalments. There is no better talking machine upon the market. It has every new and worth while improvement. It plays all makes of records and its tone is well nigh perfect. Cabinets have a beautiful piano finish.

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This offer—if taken advantage of right away, enables you to get new records for a whole year without a penny of cost. Send in coupon without delay.

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AMHERST PIANOS, LTD.,
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Send me full particulars of your free offer of a year's supply of records if I buy a Cremonaphone Talking Machine.

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Dept. B, Amherst Pianos, Limited, Amherst, N. S.

The Mothers' Union

By DOROTHY DIX

"SIS MIRANDY, ma'am," says Sis Petunia to me de odder day as she sunk down into a rockin'-chair an' panted a few pants, bein' as how she is a hefty lady wid a sca'city of breath. "Sis Mirandy," she says, "I des took my foot in my hand, dis mawnin', an' stepped around to yo' house to ax you if you would unite wid us in de Mothers' Union dat we is organizin', an' give us de right hand of fellowship."

"I aint much of a jiner," spons I, sort of cautious lak, case befo' dis I done been roped into bein' one of de charter members of a "Sassiety to Permote de Sperrit of Lovin' Kindness," which busted up in a row an' a hair-pullin' match owin' to de president havin' tuck all de money in de treasury to buy herse'f a new set o' chainey teeth, an' dat done made me sorter s'picious of clubs. Hit shorely has.

"I knows you aint one of dem women what has got so many sassiety badges on dey don't have to wear no odder clothes, sca'cely," says Sis Petunia, "but de Mothers' Union, dat's different. Hit fills a long-felt want, for whyfor should all de odder laborers in de world have deir unions an' de hardest-worked trade in de world have none?

"Hit wasn't ontil de cyarpenters an' de plumbers an' de bricklayers an' all de balance of 'em jined de union dat dey got a eight-hour day an' mo' pay, maybe when we mothers git up a Mothers' Union we won't have to wuk eighteen hours a day for our vittles an' clothes—an' dem de wust in de family. For aint hit de mother dat wears de made-over frocks an' eats what is left in de dish after she done helped de chillen?"

"Hit's a gran' plan, Sis Petunia," spons I, "but de only trouble wid hit is dat hit won't wuk, an' hit won't wuk because ev'y mother is a scab. You think any woman is gwine to walk out on a strike an' leave her own chillen to shift for deyselves because some odder woman's chillen is overwuckkin' an' underpayin' deir ma? Dat dey aint!

"You think any woman is gwine to stop walkin' her baby wid de colic becase de clock done strike an' her eight-hour day is over? No, ma'am! She's gwine to start on anudder lap around de room wid dat squallin' baby over her shoulder, an' she aint gwine to charge overtime for hit, nuther.

"You think any woman is gwine to stop in de midst of gettin' supper for her hungry fambly jist becase her time's up? You know she aint, becase de only clock dat a mother ever hears tick is des de beatin' of her own heart, an' she don't count de time nor de wuk dat she does for her chillen. An' she don't spec no pay. An' she is des built dat way, an' nobody but Gawd Almighty can change her plans an' specifications.

"But I aint got nothin' to say ag'inst de Mothers' Union. Hit's a gran' idee, an' I wisht dat we could git all de mothers to stand togedder, for ef dey did, maybe we would have enough backbone, de lot of us, to fight our chillen a little and make 'em do what we knows dey ought to do, instid of lettin' 'em do lak dey pleases becase odder people's chillen is doin' dat way.

"De trouble wid a mother's influence is dat hit's kind of weak in hits action an' feeble in hits grip. Hit wuks all right at close range, an' whilst you has got yo' chile right under yo' eye in yo' own house, but des as soon as yo' chillen gits 'way from home, mother's influence begins to peter out and lose hits effect on deir system, an' dey begins to do de things an' think de things dat all de odder chillen is doin' an' thinkin.'

"Hit don't do much good for me to keep my back yard clean, Sis Petunia, if de woman next door is runnin' a pigsty, an', similar lak, I can't make much headway lambastin' my chillen into de straight and narrow path if my neighbor is lettin' her chillen segasuate down de broad road.

"For chillen is copy-cats, an' what one does, de odder is boun' to do. An' mo' dan dat, dey ain't no young gal or boy dat don't think dat deir ma is too old and feeble-minded to know what's de proper thing, an' dat de real fountain of wisdom is de odder boys an' gals dey runs wid.

"Now you take dis here way dat de gals ondresses nowadays when dey goes to a party. My lan', when I sees my Ma'y Jane start out to show herse'f in public in a frock dat is cut C in de front an' V in de back, an' nought under de arms, I blushes until I's dat hot I feels lak I was sizzlin' on de cook-stove, but can I stop her? I can not, because ev'y mother's daughter is gwine to de ball in de same kind of a low naked gown.

"An' when I sees Ma'y Jane a dancin' dese new-fangled dances, I feels lak yellin' for de perlice, but I can't make her quit dancin' 'em becase all de older gals is dancin' de same way, an' she's got to do lak de balance of dem or paper de wall.

"But ef all de mothers was united, and de Amalgamated Order of Mothers put hits big, broad-soled foot down flat on indecent clothes an' vulgar dancin', dey could stop hit in one day.

"You better believe me, dat dere aint nothin' dat de Sisterhood of Chillen Raisers couldn't do ef dey would act togedder, for in de little black bags on de arms of fat, waddlin', grizzle-haided, middle-aged women is de money dat runs de world. An' no store-keeper wouldn't bring on de kind of frocks dem

women wouldn't buy for deir daughters, an' no restaurant man would keep de kind of a place dey wouldn't let deir chillen go to.

"Yassum, de Mothers' Union sho'ly could bring on de millennium—mo' specially in matermony, which is de place whar most of us finds ole Man Trouble waitin' for us, an' whar we gits hit in de neck.

"S'pose ev'y mother in de world, when she took her first look at her new-born baby, remembered dat she had done took a oath to stand by ev'y odder mother in de world!

"So she would say to herse'f: 'I don't want to have de tears of a sister member of de Mothers' Union on my soul, so I's gwine to raise dis gal baby up to be a good, faithful, industrious wife to some man!' Or she would say: 'I'se gwine to raise dis boy up so he'll be a tender, generous, considerate husband to some gal, an' dereby save some odder mother from breakin' her heart over de way her daughter is treated by de man she is had de misfortune to tie up wid.'

"Yassum, de Mothers' Union certainly could improve de output of husbands and wives which we mothers is turnin' out now, an' in which ev'y woman tries to gold-brick de odder woman an' onload a triflin', good-for-nothin' gal on some meek, patient, industrious man or dump a selfish, grouchy, loafin' man on a gal dat will take in washin' to support him.

"Yassum, I tell you dere's mighty few of us dat would lak to see our sons marry gals lak our own daughters, an' dat don't pray de Lawd to deliver our daughters from de kind of husbands dat we's raised up for some odder gal.

"Yassum, de Mothers' Union is suttinly got a grand future befo' hit—an' plenty of wuk cut out for hit. An' I wisht dat ev'y mother in de land would jine hit."—*In Good Housekeeper.*

A PARABLE OF A GOOD STOCKMAN

Continued from page 14

centage of children needing medical attention—that his own boy had a bad case of adenoids and tonsils, that he was starving for fresh air and that serious conditions were setting in, which, if not corrected now, could never be corrected—at which he so lost his temper that he could only think of the very poor argument that if that was true it was his own affair.

So the white calf waxed fat and kicked and Billy struggled along unhappily with a handicap that was as unnecessary as it was cruel. And when Billy led the calf into the show ring, possibly not one of the spectators looked from the perfection of the animal to the boy with listless eyes and gaping mouth that told their own story of the trouble the doctor had discovered. It doesn't matter much that some years later when Billy came down with an acute illness, a consultation of doctors ordered the deferred operation, and that the adenoids which were starving him of oxygen and the tonsils that were filling his body with poison were removed. He had lost years of growth and development and progress at school. When he came to realize this, he resented the neglect, and the timid, sensitive child became a reserved, self-conscious, rather sullen, youth whom no one, not even his parents, understood.

THE stockman's family gathered around the fire in the evening made a very passable picture of domestic felicity. The effect may have been partly due to the light coming through the red lamp-shade and the general way his wife had of putting a warm, cheerful atmosphere into the furnishing of her house. The father read his stock journals, the mother was busy with the family mending, the girls gossipped brokenly over their fancy work and Billy sat slightly apart, reading books not in anyway connected with stock-farming. It took more than a casual observer to see that the fire and the lamp were the attractions that kept them together; they had little in the way of soul-contact. They would have been just about as contented sitting around another fire and lamp with other people—except the mother. She had the natural maternal brooding anxiety over her flock, but in spite of the fact that home-making is classed distinctly as a woman's responsibility, a woman doesn't make a perfect home alone. Her greatest anxiety was for Billy. She could see him steadily drifting apart from them and when he rather abruptly told them he was leaving home she wasn't surprised.

When the break actually did come, the father felt it perhaps the most keenly. He was beginning to realize that he was getting old—he had hoped sometime to be able to turn the celebrated herd over to his son to have it carried on in the family name. And Billy had scorned the inheritance that meant his father's lifetime of hard work. Nor was there any other future ahead for Billy so far as they could see—and his father felt keenly the disgrace of having a son who was a failure. It seemed a strange injustice considering the struggle he had made to become a fairly successful man himself and he wondered why. He found the answer simply enough a few years later.

IT was at a national stock show when he met a friend of some twenty years back, a man who, though fairly successful, had not attained the prominence that he himself had earned through strenuous hard work, but he looked comparatively young and satisfied. He was interested in the stockman's success with his herd, and listened attentively to the history of one celebrity after another. Whenever he found an opening for himself, however, he talked not about his cattle but about his family. His son had come to the city with him. He pointed him out across the tables at a banquet one evening, a handsome, modest, promising looking boy, and again the next day the stockman watched with envy when he took his father off to give some advice about a calf he was buying for himself. It was a comradeship the stockman had missed. His son had never made a companion of him, he reflected bitterly.

"You must be very proud of your boy," he remarked later.

"Yes, I think Bob's started alright now," the father answered. "I don't take any credit to myself for it—'fact I think the youngsters do more for us than we do for them. You've found yourself, of course, that you have to live a little different on account of them. Why before I was married—I hate to think of it now—I farmed, almost *lived,* for the sake of a herd of cattle." When the stockman came to he was still going on. "....I wish you could see my little girl—she's almost eighteen now. It's been a great joy to watch her grow from a healthy little tom-boy to—well she's very much like her mother," which seemed to imply so much that he stopped, feeling that he was perhaps being a little ridiculous over his family.

The stockman wondered suddenly how his daughters were growing up. He hadn't paid much attention to that—their mother looked after them but he remembered now a hundred things, "advantages" she called them, that she had wanted for the girls which he considered quite unnecessary. He had taken more pride in his cattle. He might, at least, have felt responsible for his son, but what had he ever done for Billy? There were times when Billy would have given anything for his father's encouragement and he had withheld it—now the boy didn't want it. The girls, too, were rather strangers to him and they were almost women—there was much he might have done that he could never do now. But he took more prizes home from the fair than any other exhibitor.

The Same to You Sir!

LAKEFIELD, ONT.

I take pleasure in renewing my subscription to the FARMERS' MAGAZINE. *I find it a very fine paper to have in any home. I congratulate the Editor and wish him many successful years.*

J M. DECK.

Study His Daily Food Need

The average man needs about 3000 calories of food per day. Most of that need is for energy food. But he also needs some 3½ ounces of protein, to build up and repair.

Figuring these elements only, here is what they cost at this writing in some necessary foods:

Cost of Protein *Per Pound*		Cost of Energy *Per 1000 Calories*	
In Quaker Oats	$0.73	In Quaker Oats	5½ c
In White Bread	1.30	In Round Steak	41c
In Potatoes	1.48	In Veal Cutlets	57c
In Beef about	2.00	In Fish about	50c
In Ham	3.63	In Canned Peas	54c

Ten Times The Cost

Meat and fish foods, per 1000 calories, average ten times Quaker Oats' cost.

So do some vegetables. Squash, for instance, at this writing costs 15 times as much.

As energy food the oat has an age-old fame.

In protein—the costliest food elements—it is richer than any other grain. It stands about equal with beefsteak.

In needed minerals—iron, lime, calcium, etc.—the oat is uniquely rich.

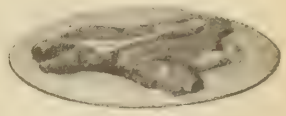
As an all-'round food, well-balanced, the oat is the greatest that grows. As a food for growing children it holds the zenith place.

Other foods are needed. Children must have milk and eggs. Vegetables are necessary.

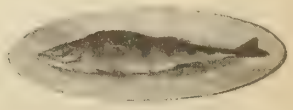
But start the day with Quaker Oats. Make it your breakfast. It costs but one-half cent per dish.

This will supply supreme nutrition, and the saving will average up the costlier foods at dinner.

5½ Cents
Per 1000 Calories



57 Cents
Per 1000 Calories



50 Cents
Per 1000 Calories

Quaker Oats

Extra-Flavory Flakes

Get Quaker Oats when you buy oat food. You owe that to yourself.

They are flaked from queen grains only—just the rich, plump, flavory oats. We get but ten pounds from a bushel.

You get this grade when you ask for Quaker, without extra price.

Two Sizes: 35c and 15c---Except in the Far West

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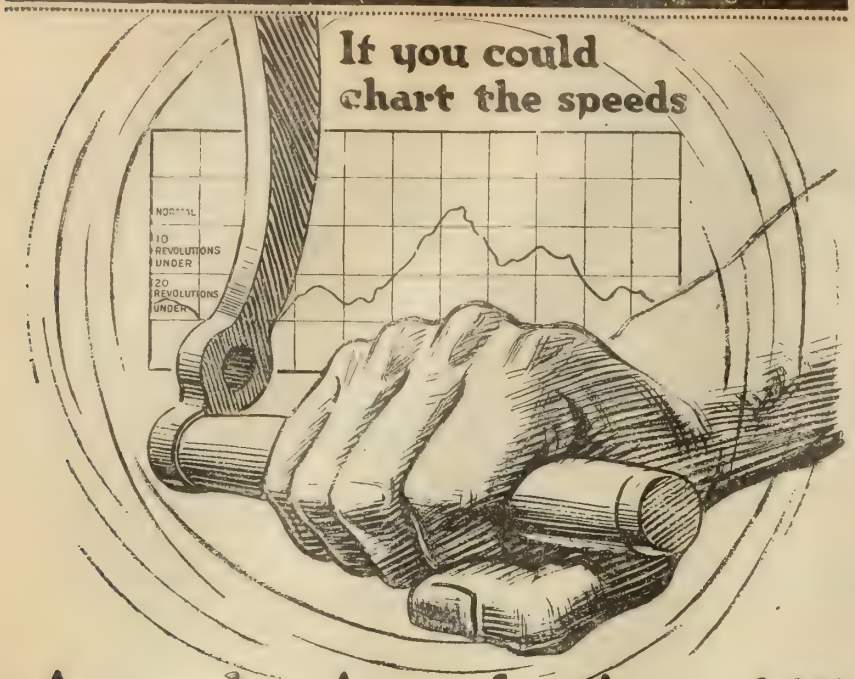


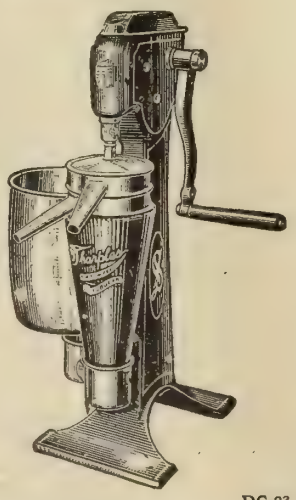
Around and Around and Around !!!
No human hand can keep up a fixed normal speed

If every owner of a fixed feed separator—especially those who *think* they are skimming clean—could see a chart of the great *variation* in speed during one week's separation, they would be amazed. The chart would show that practically all the time the separator was being turned *below* speed and wasting butterfat. Actual tests prove that 95% of all separators are turned below speed most of the time and all separators are turned below speed some of the time. No matter how careful you are, it is humanly *impossible* to turn at a fixed speed, day in and day out. Speedometers, bells and other contraptions only show the wastefulness of fixed feed separators.

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

SKIMS CLEAN AT ANY SPEED

Before you buy a separator, ask if it will *skim clean at any speed*—as otherwise you are going to lose money. Ask if it is a North American invention, North American owned. Meanwhile write for Sharples catalog and Sharples Book of Old Songs to nearest office, addressing Dept. 153



"There are no substitutes for dairy foods"

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TORONTO, ONT. REGINA, SASK.
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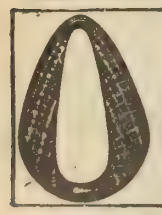

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For sale—Twelve bulls, 9 to 15 mos. old, some of them choice prospects for pure-bred herd headers, winners themselves, sired by champions and from good dams. Could also supply females not related. Write your wants. Visitors welcome.
G. C. CHANNON,
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Railway connections—Lindsay, G.T.R., C.P.R.

STEVENS' BLOOD, BONE AND POTASH FERTILIZER
A COMPLETE FERTILIZER
Analysis:-2 Ammonia, 6 Phoc. 2 Acid, Potash, 30 Lime
Write for price delivered to your station
George Stevens, 364 Mark St., Peterborough, Ont.

DAIRYING

A New Holstein Champion

THE world's seven-day record has been broken! Rolo Mercena De Kol, 30313, owned by J. B. Hanmer of Woodstock, has produced the stupendous amount of 41.54 pounds of fat in seven days, beating the former world's champion, Segis Fayne Johanna, by one pound. This Canadian champion has also gathered to herself the 30-day honors, producing in that period 160.27 lbs. fat and displacing Fairview Korndyke Mata by twelve pounds. Based on the usual 80 per cent. fat standard, the butter equivalent of the new champion is 51.93 lbs. for seven days, and 200.34 lbs. for thirty days.

The following records have been made by Rolo Mercena De Kol, authenticated under tests conducted under the direction of Professor H. H. Dean of the Ontario Agricultural College and retests made by the Holstein-Friesian Association of Canada:

1 day fat	6.86
1 day milk	125.8
7 day fat	41.54
7 day milk	738.7
Average test	5.62%
30 day fat	160.27
30 day milk	2920.5
Average test	5.47%
60 day fat	269.99
60 day milk	5795.1

Rolo Mercena De Kol was born July 2, 1913, and freshened as a mature cow for this great record on January 17th. She was milked twice daily, giving 70 lbs. per day until Mr. Hanmer started his string of test cows on February 6th, when on her first day in test she gave 72.6 lbs. milk containing 3.305 lbs. fat. On February 21st she passed the 100-lb. milk containing 4.155 lbs. of fat. On March 2nd she had increased gradually to 114.6 lbs. milk containing 4.52 fat, and for the first time had crossed the 40-lb. mark, having 40.58 lbs. butter at this time.

The ration consumed consisted of equal parts of bran, oats, distiller's dry grains, and one and one-fourth parts of oil meal and cottonseed meal and one-half parts of hominy and gluten. The oats contained 10 per cent. of peas. Each feed was mixed separately in the above proportion and the cow ate quantities as indicated previously. In the latter part of the record, when the 41.54-lb. fat record was being made, Mr. Hanmer introduced as high as two parts of oil meal and 1½ parts of cottonseed meal in the ration, cutting off the gluten and hominy. The cow handled all of the rations and did not go off feed at any time, although changes in milkers and weather conditions affected the record from time to time and threw her production down as indicated in the story above.

A PINT OF OATS FOR THE CALVES

By Peter Lanigan

A PINT of oats, or even half a pint, given to calves daily during the winter will have two important effects.

Firstly, a calf that is run down, or even a calf in good condition which was reared on skim milk, can be made as healthy and rugged as the calf that was reared by the mother, and is not receiving oats.

Secondly, if you teach a calf to take oats out of your hand he will not be timid and wild when out on a ranch for a while, or in fact at any time. As soon as he thinks you have something for him he will walk up to you no matter how long he is in the ranch. In the case of a calf that was reared by its mother, no matter how wild he may be, (even if he never saw a person before), i.e., he was calved on the ranch, his timidity can be conquered by patience. Teach him to eat oats by throwing some on the ground or floor, and after he gets fond of it you may gradually, day by day, get closer to him until you get him to take it from your hand. Besides making him a quiet animal he will also keep that nice sappy appearance which is lacking in calves reared on skim milk.

THE USES OF ICE ON THE FARM —PRESERVATION OF MEAT

By Peter Lanigan

BY making a hole in the ice you may place a barrel (or two or three, as the case may be) into it, so that the mouth of the barrel will be two or three inches above the sawdust, and no sawdust will fall into the barrel when taking meat out. If unsalted meat is wanted you may put it in a salt sack, clear the sawdust off the ice, and lay the bag of meat on the ice, covering bag and ice with the sawdust. You will then have fresh meat for use when you want it.

(2) Preservation of cream, milk, eggs and butter.

By having a passage way 2, or 2½ ft. x 8 ft. wide beside the bin you can place cream, milk, eggs and butter in the passage, taking care not to place them against the bin so as to cause them to freeze, (which you would not want to happen). Butter tubs that are packed may be laid in on the bin of ice out of the way.

(3) Delicacies, etc.

Many dishes are made or rendered possible by the use of ice. The most common dish is ice-cream, which is certainly a great treat, and lastly but not least is the use of a glass fruit-jar filled with ice and placed in the can of water for drinking. By doing this not only will you have a good, clear and cool drink of water while out in the sultry hay and harvest fields, but the taste of the ice-water will be avoided.

THE CALL OF THE BREED

With Apologies to J. H. Hunter.

By C. L. Kirk

I'm going back to the Ayrshire, I'm going to stay.
I've wandered far from the right breed, and I've come too far away
But Common Sense has told me that I will have to go.
Back to the dear old Ayrshire that I left sometime ago.

* * *

Yes I've wandered far from the Ayrshire, to a strange and alien breed
And I've sometimes wondered why on earth I ever did the deed.
But still I heard the voices that always seemed to say:
"Why don't you try some other breed I'm sure you'll find it pay?"

* * *

Oh! pleasant it was for a little while to see the full, full pail;
But when the test for fat was made, it was a different tale.
So I'm going back to the Ayrshire, the Queen of the Dairy Breeds;
She's the economical producer, with the now high cost of feed.

* * *

The type is there in the Ayrshire, with her upturned horns well spread.
And what's prettier coloring in a cow than the good old white and red?
Others may choose their favorites from dairy breeds well known,
But me for the Ayrshire bossie; want it for my own.

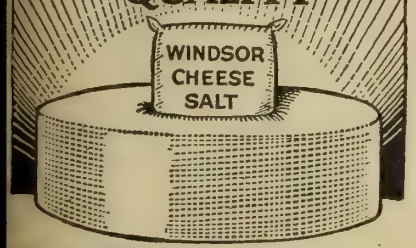
* * *

So I'm going to the Ayrshire, but I'll have to start anew;
I pray that I may get rid of the breed of which I'm through.
For I long to get back to the Ayrshire Oh, yes, I long for the day!
I'll give away this other breed, if no one else will pay.

CAKED UDDERS

"I HAVE had cows calve at night with bags so badly caked it was impossible to milk them. After one application of Egyptian Liniment they were all right next morning," says Mr. W. Robinson, Ituna, Sask. Egyptian Liniment is most effective for burns, scalds, cuts and bruises. It stops bleeding instantly. Made only by Douglas & Co., Napanee, Ont. 35 cents a bottle at all dealers.

It's the PURITY of the SALT used that assures QUALITY



Windsor Cheese Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED.

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Open front—on and off like a coat. Handiest work-shirt ever made. Generously cut. Stand wear and tear of hardest work. Double and triple stitching. Buttons can't come off. Ask your dealer for "Kitchen's," or write us.

Made in Canada only by
The Kitchen Overall and Shirt Company, Limited
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Many a man can sell who has never tried.

We have a plan that will help you. Write to

Agency Division

The MacLean Publishing Company, Limited

143-153 University Avenue, Toronto, Can.

Seasonable Cookery

Apple Ginger

The following recipe is excellent for preserving the apples left over late in the season:

4 pounds sour apples
2 pounds sugar
4 lemons
1 ounce ginger root.

Pare, core and slice apples. Add lemons sliced thin, sugar and ginger root, and cook very slowly for six hours. Pour into glasses and cover.

Corn Fritters

1 can corn
1 egg
½ cup flour
2 teaspoons salt
Pepper.

Beat well and drop by spoonfuls on a well-greased griddle. When brown on one side turn and brown the other side.

Cheese Croquettes

3 tablespoons butter.
4 tablespoons flour
2-3 cup milk
1 egg
1 cup grated cheese
Salt and pepper
Few grains cayenne
Dry crumbs.

Make a thick, white sauce by melting butter, stirring in flour, gradually adding milk and stirring over the fire until well thickened. Add the egg yolk and stir until well mixed, then add the grated cheese. As soon as the cheese melts remove from the fire and season with salt and pepper. Spread in a shallow pan and cool. Shape into croquettes, dip in crumbs, then into egg white which has been slightly beaten and diluted with cold water. Dip in crumbs again and fry in deep fat or brown in the oven.

Salmon Croquettes

3 tablespoons butter
4 tablespoons flour
2-3 cup milk
1 egg
1 to 1½ cups salmon
Salt and pepper
Dried crumbs.

Make sauce the same as for cheese croquettes. Add the salmon, spread in a pan and cool. Shape in croquettes, dip in crumbs, egg white and crumbs again and fry in deep fat or brown in the oven.

Rhubarb Pudding

1½ cups flour.
3 teaspoons baking powder
½ teaspoon salt
2-3 cup milk
¼ cup butter.

Mix and sift the dry ingredients. Work in butter with the tips of the fingers. Add milk gradually, toss on floured board, knead and roll out one-half inch thick. Peel and cut rhubarb in one-half inch pieces, fill a pudding-dish three-fourths full, and add sugar allowing one cup or a little more to three cups rhubarb. Dot one tablespoon of butter over the top. Put crust over the top and bake thirty minutes in a moderate oven. Serve with cream and sugar or a brown sauce.

Roll Jelly Cake

2 eggs
½ cup granulated sugar
2 tablespoons cold water
2 teaspoons baking powder
About 1 cup flour.

Beat the eggs very light, add sugar gradually and continue beating. Add water, flour, baking-powder and salt. Pour into a greased dripping pan preferably with a greased paper in the bottom, having the batter about ⅜ inch deep. Bake in a moderate oven about fifteen minutes. Spread with jelly or a cake filling and roll.

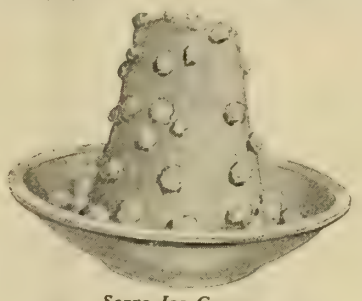
Fruit Jumbles

½ cup butter
1 cup sugar
3 eggs
1 pound dates chopped
¼ pound shelled walnuts
1 teaspoon vanilla
1 teaspoon soda
2 cups flour.

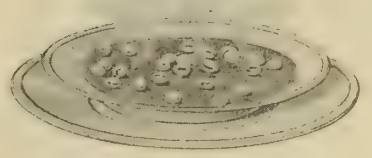
Beat butter and sugar to a cream, add fruit and nuts and eggs well beaten. Sift flour and soda and mix all into stiff mixture. Drop from a teaspoon on a greased baking dish.

He Will Take
The Bubble Grains, As You Know

Serve Fruit
With Puffed Grains and without, and folks will always choose the blend.



Serve Ice Cream
Serve it plain, then with a garnish of these flimsy nut-like bubbles. See which children like the better.



Serve Soup
In clear form, then with Puffed Grains in it. See what these toasted bubbles add.

Serve Nut Meats
Then serve Puffed Grains, crisped and lightly buttered. See which boys prefer.

Offer a boy a dish of bread and milk, and a dish of Puffed Wheat in milk. You know he will take, ten times in ten, these flaky, toasted bubbles.

In Puffed Wheat every food cell is exploded. The grains are shot from guns. He gets a scientific food, where digestion is easy and complete.

When children like it better—vastly better—why not serve some Puffed Grain to them in every bowl of milk?

Offer Him Choice at Breakfast

Serve Puffed Wheat to him, and beside it any other wheat food.

He will see in Puffed Wheat flimsy, toasted bubbles, puffed to eight times normal size.

He will taste an almond flavor, much like toasted nuts.

There was never a whole-wheat dish ever created which could tempt a boy like that.

When Puffed Grains are best for them, and are liked best, why not always serve them?

Puffed Wheat

Puffed Rice

Bubble Grains
Each 15c

Except in Far West

How to Serve

With cream and sugar.
With melted butter.
In bowls of milk.
As ice cream garnish.
In your soups.
Also douse with melted butter for hungry children after school.

The Quaker Oats Company

Sole Makers

Peterborough, Canada — Saskatoon, Canada

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It can be laid quickly, and at half the cost of new shingles.

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Neponset Paroid Roofs have proven their durability and economy for twenty years.

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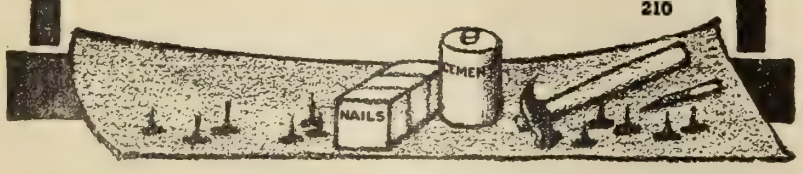

It's Dangerous to Keep your Car in Your Barn

Back-fire has resulted in many a car taking fire. If this should happen in your barn there will be a complete loss of all.

Get an Auto Home Garage for your car

and place it at a safe distance from the rest of the buildings. The "Auto Home" is built in sections of wood or metal clad. Painted and glazed complete. Can be erected in a short time as all parts fit accurately. Built in five sizes—and sells at a surprisingly low price.

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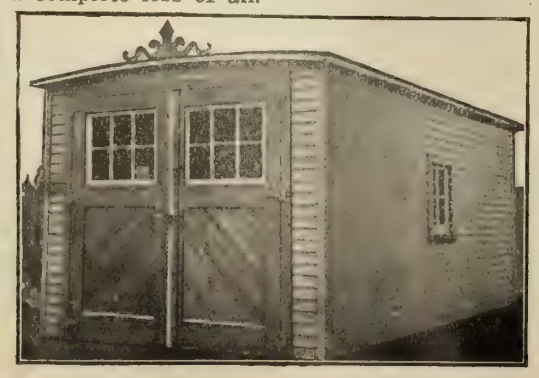

WILDFIRE

Continued from page 23

appeared on the crest. They showed an instant, then flashed out of sight. The boom grew steadier, closer, louder, and the reverberations, like low detonations of thunder, were less noticeable because all sounds were being swallowed up.

A harder breeze puffed into Bostil's face. It brought a tremendous thunder, as if all the colossal walls were falling in avalanche. Bostil knew the crest of the flood had turned the corner above and would soon reach him. He watched. He listened, but sound had ceased. His ears seemed ringing and they hurt. All his body felt cold, and he backed up and up, with dead feet. The shadows of the canon lightened. A river-wide froth, like a curtain, moved down, spreading mushroomwise before it, a rolling, heaving maelstrom. Bostil ran to escape the great wave that surged into the amphitheater, up and up the rocky trail. When he turned again he seemed to look down into hell. Murky depths, streaked by pale gleams, and black, sinister, changing forms yawned beneath them. He watched with fixed eyes until once more the feeling of filled ears left him and an awful thundering boom assured him of actualities. It was only the Colorado in flood.

CHAPTER XII

Bostil slept that night, but his sleep was troubled, and a strange, dreadful roar seemed to run through it, like a mournful wind over a dark desert. He was awakened early by a voice at his window. He listened. There came a rap on the wood.

"Bostil!...Bostil!" It was Holley's voice.

Bostil rolled off the bed. He had slept without removing any apparel except his boots.

"Wal, Hawk, what d'ye mean wakin' a man at this unholy hour?" growled Bostil.

Holley's face appeared above the rude sill. It was pale and grave, with the hawk eyes like glass. "It ain't so awful early," he said. "Listen, boss."

Bostil halted in the act of pulling on a boot. He looked at his man while he listened. The still air outside seemed filled with low boom, like thunder at a distance. Bostil tried to look astounded.

"Hell!...It's the Colorado! She's boomin'!"

"Reckon it's hell all right—for Creech," replied Holley. "Boss, why didn't you fetch them hosses over?"

Bostil's face darkened. He was a bad man to oppose—to question at times. "Holley, you're sure powerful anxious about Creech. Are you his friend?"

"Naw! I've little use fer Creech," replied Holley. "An' you know thet. But I hold for his hosses as I would any man's."

"A-huh! An' what's your kick?"

"Nothin'—except you could have fetched them over before the flood come down. That's all."

The old horse-trader and his right-hand rider looked at each other for a moment in silence. They understood each other. Then Bostil returned to the task of pulling on wet boots and Holley went away.

Bostil opened his door and stepped outside. The eastern ramparts of the desert were bright red with the rising sun. With the night behind him and the morning cool and bright and beautiful, Bostil did not suffer a pang nor feel a regret. He walked around under the cottonwoods where the mocking-birds were singing. The shrill, screeching bray of a burro split the morning stillness, and with that the sounds of the awakening village drowned that sullen, dreadful boom of the river. Bostil went in to breakfast.

He encountered Lucy in the kitchen, and he did not avoid her. He could tell from her smiling greeting that he seemed to her his old self again. Lucy wore an apron and she had her sleeves rolled up, showing round, strong, brown arms. Somehow to Bostil she seemed different. She had been pretty, but now she was more than that. She was radiant. Her blue eyes danced. She looked excited. She had been telling her aunt something, and that worthy woman appeared at once shocked and delighted. But Bostil's entrance had caused a mysterious break in everything that had been going on, except the preparation of the morning meal.

"Now I rode in on some confab or other, that's sure," said Bostil.

"You sure did, Dad," replied Lucy with a bright smile.

"Wal, let me sit in the game," he rejoined.

"Dad, you can't even ante," said Lucy.

"Jane, what's this kid up to?" asked Bostil, turning to his sister.

"The good Lord only knows!" replied Aunt Jane, with a sigh.

"Kid?...See here, Dad, I'm eighteen long ago. I'm grown up. I can do as I please, go where I like, and anything ...Why, Dad, I could get—married."

"Haw! haw!" laughed Bostil. "Jane, hear the girl."

"I hear her, Bostil," sighed Aunt Jane.

"Wal, Lucy, I'd just like to see you fetch some fool love-sick rider around when I'm feelin' good," said Bostil.

Lucy laughed, but there was a roguish, daring flash in her eyes. "Dad, you do seem to have all the young fellows scared. Some day maybe one will ride along—a rider like you used to be—that nobody could bluff....And he can have me!"

"A-huh!...Lucy, are you in fun?"

Lucy tossed her bright head, but did not answer.

"Jane, what's got into her?" asked Bostil, appealing to his sister.

"Bostil, she's in fun, of course," declared Aunt Jane. "Still, at that there's some sense in what she says. Come to your breakfast, now."

Bostil took his seat at the table glad that he could once more be amiable with his women-folk. "Lucy, tomorrow 'll be the biggest day Bostil Ford ever seen," he said.

"It sure will be, Dad. The biggest surprising day the Ford ever had," replied Lucy.

"Surprisin'?"

"Yes, Dad."

"Who's goin' to get surprised?"

"Everybody."

Bostil said to himself that he had been used to Lucy's banter, but during his moody spell of days past he had forgotten how to take her or else she was different.

"Brackton tells me you've entered a hoss against the field."

"It's an open race, isn't it?"

"Open as the desert, Lucy," he replied. "What's this hoss Wildfire you've entered?"

"Wouldn't you like to know?" taunted Lucy.

"If he's as good as his name you might be in at the finish...But, Lucy, my dear, talkin' good sense now—you ain't a-goin' to go up on some unbroken mustang in this big race?"

"Dad, I'm going to ride a horse."

"But, Lucy, ain't it a risk you'll be takin'—all for fun?"

"Fun!...I'm in dead earnest."

Bostil liked the look of her then. She had paled a little; her eyes blazed; she was intense. His question had brought out her earnestness, and straightway Bostil became thoughtful. If Lucy had been a boy she would have been the greatest rider on the uplands; and even a girl as she was, superbly mounted, she would have been dangerous in a race.

"Wal, I aint afraid of your handling of a hoss," he said, soberly. "An' as long as you're in earnest I won't stop you. But, Lucy, no bettin'. I won't let you gamble."

"Not even with you?" she coaxed.

Bostil stared at the girl. What had gotten into her? "What 'll you bet?" he queried, with blunt curiosity.

To be continued

LIVESTOCK

Produce Prices for the Fortnight

By STANLEY T. ARTHUR

AFTER selling at prices 16c above the same week a year ago, butter at Toronto dropped some time ago, in the course of a week, as much as 10 and 11c per pound, in sympathy with a general decline in all markets. The market had been so high as to provide a fruitful topic of discussion for the city press, but at the present level of prices it still sells about 10c above the price of a year ago.

There is every reason for this high level, according to the law of supply and demand. European demand has cleaned the stocks of butter not only in Canada, but also in the United States, and forced the domestic consumers into competition with markets that are willing to pay any necessary price for supplies, and that have really learned how to pay big prices during the war.

In Toronto, at time of writing, creamery butter is selling on a basis of 51c per pound, delivered, with separator butter at 43 to 44c per pound; dairy, 41c; and cooking butter, 31c.

The Montreal butter market sharply reacted last week, and jumped from 51½c to 54½c per pound for creamery. The reason advanced for this behavior was the fact that American butter is relatively higher than ours, and the price was available. New York quotes creamery up to 60c per lb.

Churning cream follows the butter declines, but more slowly. The last two days of last week saw 52c being paid at a number of Ontario creameries, but this week the price has been adjusted at 50c per pound of butter fat. It is understood that this prevails at London, Palmerston, Walkerton, and several other points, while the different conditions at Toronto have resulted in a price of 55c per pound of butter fat, net to the shipper, being paid.

It is interesting to note that the price for sweet cream at Toronto is set by contract at 54c per pound of fat, delivered at Toronto, and is actually below that of sour churning cream. Of course, where the sweet cream is shipped to a creamery and utilized for butter-making, the higher price is paid, as it would not pay any firm to take undue advantage of the peculiar situation for the sake of a few cents, as a satisfied customer is worth much, but a dissatisfied one is a genuine expense.

The cheese market has been behaving in a remarkable way since the season opened up at the beginning of the month, a week or so later than usual. When it started out at 26c per pound in the East, and 27c in Western Ontario, it was thought that the high point was reached right at the start, and buyers tried to secure cheese at an advance of 20c, and would pay anything more that the market would bring. Those who talked 23 to 25c cheese were plentiful. But successive boards have seen the price raised higher and higher, until last week Napanee produced a price of 28 5-16c per pound, and Picton, 28¼c.

The reason for this is hard to ascertain. At first it was expected that some sort of control on cheese exports would be kept this year, and that prices would be held down, but the days go past without any announcement being made. In the retail stores the prices continue to go up and up, following the boards—if not anticipating them sometimes. It appears as though the people would buy cheese at any price, but there must be a limit to the demand. Advices as to

Continued on page 37

"The Vesuvius Plug is gas tight under any and all conditions, and vibration cannot affect it." —A. R. MOSLER.

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They break under the strain—generally at the most inopportune time! The way to get value—the true economy is to buy MOSLER VESUVIUS TRACTOR PLUGS, made with *Unbreakable Mica Insulation* —they may mean the saving of many dollars at a vital time.

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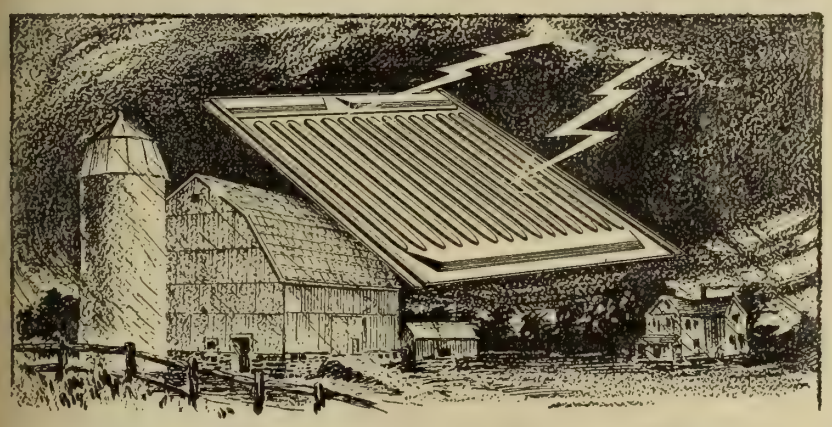

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LIGHTNING is a permanent menace to the farmer whose buildings are inflammable. Whenever the sky blackens with the gathering thunder-clouds and the vivid streaks of destructive lightning cut through the gloom he may expect at any moment to see his barn catch fire.

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Pedlar's "George" or "Oshawa" shingles, properly grounded, present a surface of solid steel, which takes the lightning stroke and conducts it harmlessly to the earth, where its force is dissipated and lost.

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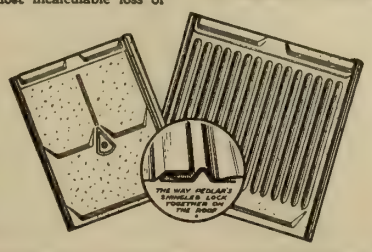
Why take needless risks?

Why aid the elements in destruction?

A Pedlar-shingled roof is not only the safest roof you can have, but in the long run it is also the cheapest, for not only does it repel lightning and resist fire from any other cause, but it cannot rot or decay. It is the roof that endures—fire-proof, storm-proof, time-proof.

And it is easy to put on—big, generous, shingles, with the simplest and most effective lock ever invented.

Look into it! Write us for full details and prices if your local dealer cannot supply.



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READ WHAT F. J. MEECH DID

"This year—(1918)—owing to the war, I grew a considerable acreage of wheat and my crop on this eighty acres of land was about 1,500 bushels of wheat; 250 bushels of oats; 6 tons of oat hay; 25 tons of potatoes, and from a tract about one acre set aside for garden and small produce I have sold about $75 worth of vegetables in addition to having sufficient for my own use till my next crop comes.

"I have also commenced a small dairy, having five cows which are yielding at the rate of $90 per month.

"My land is in a district where alfalfa is an established crop, and two or three cuttings can be taken off in a season."

Mr. Meech purchased eighty acres of irrigable land near Lethbridge, Alberta, from the C.P.R., towards the end of 1916.

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General Superintendent of Lands, C. P. R.

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THE delicate balance of the separator mechanism determines its accuracy of operation—its precision, completeness and speed in separating out **all the butter fat.** And this mechanical accuracy depends on correct lubrication.

IMPERIAL Separator Oil

is manufactured to exactly meet the peculiar requirements of cream separators. It penetrates the close fitting bearings and assures ample lubrication. Does not congeal or gum. Insures easy, frictionless operation and satisfactory results with all types of separators.

Sold by reliable dealers everywhere.
In cans—sizes 1 pint to 4 gallons.

IMPERIAL OIL LIMITED
Power-Heat-Light-Lubrication
BRANCHES IN ALL CITIES

POULTRY

Feeding Baby Chicks

CHICKS should not be given feed of any kind until they are 48 to 60 hours old. Chicks shipped or brought from hatcheries are ready for feed when received. The first feed should be given sparingly and often. Feed on a clean floor or board with a cleat around the edge to prevent waste or on a piece of burlap stretched and pegged to the ground at the corners, so that the chicks will get nothing except that which is fed. Feed five or six times a day or about every 2 or 2½ hours.

Start with a drink of sour skimmilk or buttermilk. Keep this before them at each feeding the first week. The first four or five days feed a mixture of rolled oats (oat meal) 2 parts, rubbed fine, and wheat bran 1 part, with a light sprinkling of fine grit or clean coarse sand. Where the milk is not available hard-boiled eggs, rubbed up fine, should be added at the rate of about two eggs a day for each 100 chicks. A layer of dry alfalfa leaves, chopped clover, or dried lawn clippings should be scattered in the brooder and should be cleaned out and a fresh supply added every two or three days. Sand, shavings, etc., should not be used on the floor the first week or two or the chicks may eat enough to cause serious injury.

About the fifth day add a little cracked wheat and cracked corn, gradually reducing the amount of oat meal and bran. After the seventh day leave out the bran in the above mixture and keep a dry mash in a feed hopper always available to the chicks. This mash should be made of bran 100 lbs., shorts 50 lbs., chopped barley or oats 25 lbs., fine charcoal 2 lbs., and fine salt 1 lb. When milk is not available stop feeding the eggs and add 25 to 30 lbs. of beef scraps to this dry mash.

Milk or water should be kept before the chicks at all times from the first. Where milk is easily obtained use this alone the first week and milk and water after that time. Keep the milk vessels clean, dirty rancid milk may be just as injurious as good clean sour milk is beneficial.

After two weeks the oat meal may be eliminated and a scratch feed given twice a day composed of 100 lbs. wheat, and 50 lbs. chopped corn. Keep dry alfalfa, grit, and a little fine charcoal always before them.

When the chicks are three to four weeks old get them out in the orchard or give them free range and plenty of growing green food where possible. Chopped oats, chopped barley, and the dry mash above should be kept in feed hoppers always available. The scratch feed or whole grains can be fed in hoppers as the chicks will get plenty of exercise while foraging.

Avoid sloppy or wet feeds. Keep the brooder, litter and chicks always dry. Wet litter and feeds or dampness in the brooder are perhaps the worst enemies the chicks could have. Don't put chicks of different ages together in the same brooder. Don't keep the chicks in the same runs as the old or mature stock. Feed regularly all the chicks will clean up but don't overfeed. Keep the brooder clean and free from mites, and the chicks free from lice.

CLEAN UP AFTER A HATCH

BURN or deeply bury all dead chicks or fowls. Also all dead eggs, shells and debris from incubators and hatching nests. If such are carelessly left lying about the place, conditions arise which breed disease. Rats, cats, skunks and other vermin, or somebody's pet dogs may spread this carrion all over the place.

PREVENT DISEASE

THOUSANDS of chicks are lost each year because of damp, unsanitary brooders and surroundings. Other brooder evils are overcrowding, poor ventilation, overheating, chilling, bad methods of feeding and carelessness and neglect. A good brooder, good feed and good common sense are necessary for success.

Road Building in Canada

By ALLAN GRAHAM

THERE is no gainsaying the fact that Ontario is facing a period of road-building, in which greater strides will be made than have been made in all the preparatory years that are past. The Provincial Government is committed to it, and the Federal Government is coming to the front with a grant of $20,000,000 to be expended on good roads in the next five years. In addition to this, the Provincial scheme has been endorsed by the representatives of all the counties in the province at the Good Roads Convention held recently in Toronto.

The situation has not developed to this point without criticism and opposition, chief of which came from the United Farmers of Ontario in their last annual convention. It has been critically charged that we are about to embark upon "an orgy of road building."

Referring to this charge, President C. R. Wheelock of Orangeville, declared: "If a progressive program of road-building, every detail of which has been carefully thought out and carefully planned, in the most sober and sane manner, can be called an orgy of road-building, then we are going to have an orgy."

Interest centres for the moment around the announcement that the Dominion Government is about to grant 20 millions for road improvement in Canada, in the next five years, to be divided according to population among the provinces. Nothing very definite about the application of this fund was understood until A. W. Campbell, C.E., Dominion Highway Commissioner, announced that it would be applied to "certain through roads" which would be selected in a general way by the Federal authorities, but the definite selection of route and administration would be left to the provinces themselves.

This question of payment is one of the most important matters before the public to-day, if one can rightly interpret the feelings of the county councillors who form the Ontario Good Roads Association; and the knowledge that the Federal Government proposed to pay 40 per cent. of the cost of the most expensive roads in the province was welcomed with applause. With the province paying 70 per cent. of the balance, and the counties 30 per cent., the immediate burden would be markedly relieved.

In Ontario there are a total of 55,000 miles of rural roads. Coming under the modern improvement schemes are the following:

Provincial roads	600 miles
County roads	9,200 miles
Provincial county roads	2,500 miles

For these various classes of roads,

which are given in order of traffic and importance, considerable of the revenue from motor licenses is utilized—and this source is increasing rapidly. In 1917 Ontario had realized $950,000 from motor licenses, and in 1918 this had become $1,200,000, with only one car for every 39 people, while in the agricultural state of Iowa there is a car for every 9 people, as Hon. Findlay Macdiarmid pointed out.

It is further denied that these roads are "joy roads"; they are as necessary for business purposes as for pleasure. At any rate, the heavier traffic is coming—the increase in motor licenses shows just how rapidly—and it must be met with suitable roads or the existing ones will become impassable.

President Wheelock had this in mind when he stated that "Roads must be built for the traffic they are to carry, and if the heavy traffic can be concentrated on a few hundred miles of main roads, thousands of miles of ordinary country roads will be relieved of building the more expensive types which otherwise would be necessary. An ordinary gravel road would be destroyed in a few days by the traffic which the Toronto-Hamilton highway carries.

Hon. Geo. S. Henry went still farther in expressing himself on the point. "The township system," he said, "will not be complete until farmers can use their cars all the year round, unless when the roads are covered with snow. The bad spring and fall roads will have to go. Once the main roads are put in shape the taxpayer will demand the improvement of minor roads."

It was stated (and it is a fact) that urban residents had been taking a stand for the application of a portion of the motor license fees to the municipalities where they had originated, instead of having them applied to the rural roads. Mr. A. W. Campbell pointed out that the 47 per cent. of the population living in cities and towns was relieved almost entirely from paying for the roads of the country, in spite of the fact that a large part of the traffic over those roads is between towns and by townspeople. "Until an equitable basis is realized," said the engineer, "an injustice is being done the people in rural districts."

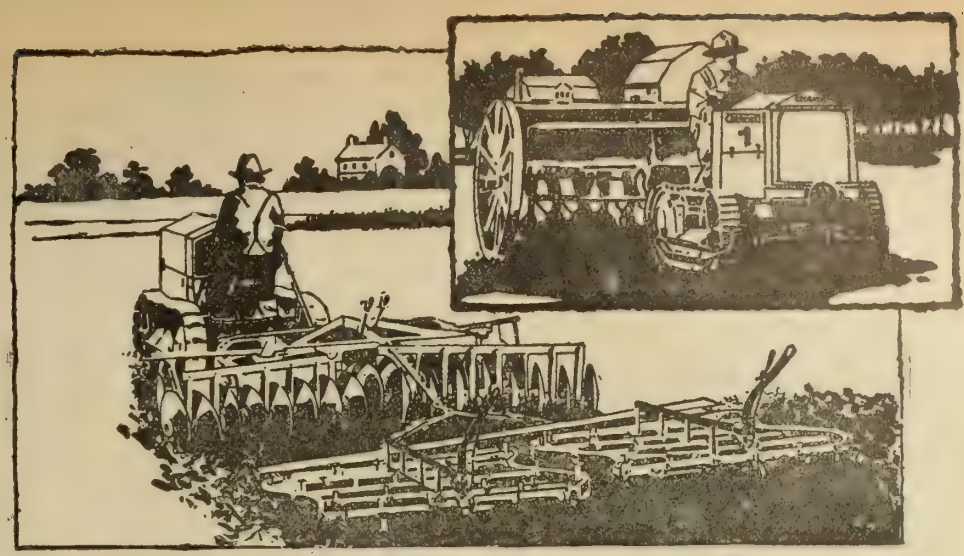
Hon. Mr. Henry referred to New York State where the urban municipalities pay 85 to 90 per cent. of the maintenance of the improved roads, which are entirely outside their own borders, and admitted that Ontario had not advanced very far as yet.

There is need for outside assistance in the upkeep of some roads at least. This cannot be questioned. Hon. Mr. Macdiarmid, under whose Department the work is carried on, referred to the case of Lincoln county, where the international traffic from Niagara to Hamilton is centred. During the past two years $1,000 a mile had been spent on the roads in question, and at the end of the second year it was in worse condition than at first. The province, therefore, had justly been asked to take it over and maintain it, paying 70 per cent. of the cost, as the excessive traffic was foreign to the county, and of little or no benefit to it in any way.

Entirely aside from the question of "who pays for the road," or "will the expenditures tax the powers of payment," the Department is prepared to go ahead with the work in Ontario, and is definitely committed to it. During the past several war years the policy has been one of "sitting tight," trying out experimentally the good roads legislation that was being placed on the books, and general preparation for the day when extended road improvement would be possible; when men and materials would be economically available for the work.

If that time has not yet fully come, it is at least urged that the work should be commenced to provide employment at a time when the lack of it appears to be a menace to the tranquility of the life of the province. And so Hon. Mr. Macdiarmid stated that his Department was prepared to go ahead with the work.

The "scientific" idea in road building is gaining ground, and township superintendents are gradually being introduced, but when a resolution advocating the abolition of statute labor was introduced, it passed only "by the skin of its teeth" and by a narrow margin.



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Do Twice the work with half the Help

A Tractor is farm power.

Buy a tractor which will work the most days in the year.

If your tractor is to pay you it should supplant several horses and men on your farm. It should enable one man to do twice as much work. It should enable you to put more land under cultivation because of faster work at the right time.

What you need is a tractor which will disc, harrow, seed, summer fallow, harvest, thresh, cut ensilage, haul loads, run machinery. A real worker.

The Cletrac tank-type tractor offers you this service 100%.

We say 100% because the Cletrac will disc, harrow and seed over plowed ground *without packing the soil.* Rides *on top* of the soil. Won't even crack an egg buried one inch deep.

So it works faster—works better—works on less fuel.

And the fuel is kerosene (coal oil). Scientific design makes the Cletrac operate *efficiently* on kerosene.

Let the Cletrac tank-type Tractor dealer show you how a Cletrac pays for itself. Write us for booklet "Our Owners Say," telling the Cletrac story in the users' words.

The Cleveland Tractor Co. of Canada Limited
Windsor, Ontario

St. Marys, Ont.

Dear Sir,—I have these tractors working in plowing and preparing land for flax and other crops.

They are as much superior to the high-wheeled tractor, which I used before, as a twenty-horse power steam engine is over the old horse power.

We have plowed with three 12-inch bottoms eight inches deep with the ground frozen to a depth of three inches, at the rate of one acre an hour.

We have found it delivered on the belt over thirty horse power and is actually quicker to set and easier to tighten on the belt than any other rig we know of.

I have sold four teams of horses, which we used for this last year for about one quarter the acreage I will be running this Spring with two tractors.

Yours very truly,
(Signed) A. L. McCredie

Cletrac
TANK-TYPE TRACTOR

Frost & Wood Mower

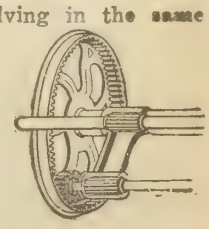
It's a sure crop getter, because it embodies 80 years' experience of Canadian Hay Crop conditions.

The F. & W. Mower is sure to give you splendid service for many years to come. It is very easy on your horses, and it's so perfected mechanically that it is always ready for work, and rarely calls for repairs or adjustments.

Think what it means to look out at a heavy, and perhaps tangled hay crop, and be able to say, "My Frost & Wood Mower will go through that alright." Most mowers will cut a nice, standing crop but you don't always get that kind—your Frost & Wood will handle the other kind, too.

Take Our "Internal Drive" Gear, For Instance—

It transfers the power from the drive wheel to the cutter bar—it is on the inside, revolving in the same direction so that it never loosens, rattles or breaks its cogs. Heavy brass bushings are proof against years of hard wear, while splendid roller bearings make light draft. The heavy, high-carbon steel cutter bar can be set in a second at any angle, and the knives continue cutting even when raised to clear an obstruction, saving time and crop.



Too many good features to even list them here. Let us send you our newest folder on Frost & Wood Mowers, Rakes and Loaders.

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SMITH'S FALLS Montreal St. John

Sold in Western Ontario and Western Canada by

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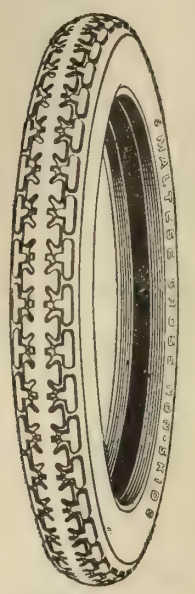
MALTESE CROSS TIRES

Comfort in motoring depends more upon good tires than upon any other single item of equipment.

Maltese Cross Tires are an assurance of maximum comfort, satisfaction and mileage.

Sold by Dealers all over the Dominion.



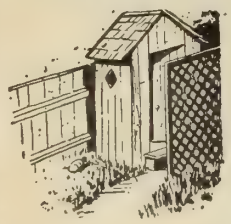
The Non-Skid Tread

Gutta Percha & Rubber Limited

Head Office and Factory, TORONTO

BRANCHES: HALIFAX, MONTREAL, OTTAWA, TORONTO, FORT WILLIAM, WINNIPEG, REGINA, SASKATOON, EDMONTON, CALGARY, LETHBRIDGE, VANCOUVER, VICTORIA.

Only a few hours' job to get rid of the unsanitary outhouse



And you can install a modern, sanitary toilet *indoors*. Not a mere chemical commode. But the same standard of comfort, cleanliness and privacy that folks in the city have. A real *sewage* DISPOSAL system.

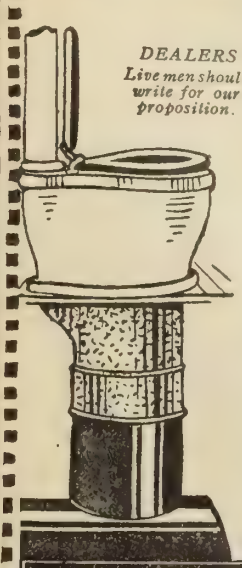
That's what the Kaustine system is. Built for indoors! Designed for anywhere in the house. And it is not only easy to install. It is thoroughly effective in all climates and conditions. Gets rid of unhealthy flies and odors. Gives no trouble. Lasts a lifetime.

Over 50,000 Kaustine Waterless Toilets have been installed in unsewered localities. In schools, factories and railroad stations, as well as in farm homes.

You'll be surprised how little it will cost to install this convenient sanitation *in your home*. Less than fifty bushels of wheat will buy it.

Don't "put up with" the disagreeable outhouse one day longer. Write for the Kaustine booklet. Read our long-term guarantee. Ask about our service. Send the coupon. Now.

DEALERS
Live men should write for our proposition.



KAUSTINE CO., Limited
Toronto, Ont.

Kaustine Waterless Toilets

KAUSTINE CO. Toronto
Gentlemen: I want to read your booklet about sanitation and indoor toilets. This places me under no obligation to buy.

Name .....

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Give Nearest Town

FRUIT GROWING

Ontario Apples Will Pay

By F. M. CHAPMAN

APPLE growers in old Ontario who have vision, are preparing a drive for better apples. Market prospects are likely to be better with the coming of peace. Too many orchards have been shamefully neglected during the past four years, in that scale, insects, fungus diseases and lack of cultivation have reduced the production capacity of the trees considerably. But now, old sods are being broken up, the dormant spray has been applied, and pruning is being done as fast as labor will permit.

This will prepare these orchards for a better output of fruit and make for renewed life in the trees next year. Already our apple tree census reveals a great shortage of bearing trees, and the logical result is sure to raise prices for the good fruit that the world will demand. Our home consumption is a big one, despite the poor advertising that is done by the producers to develop trade. It is capable of enormous expansion. If some direction were given to a campaign to keep before our consumers the value of apples in the home as well as the best way of serving the various varieties of apples, the demand for boxed fruit would exceed any production we could put up.

The production of better fruit of better varieties, and a better packing of the apples is of first importance to a successful apple grower. The people like medium-sized apples. They want good appearing fruit. Table and dessert varieties are demanded from August till June.

There are plenty of good apples that can be grown in Ontario to satisfy the most exacting taste. Northern Spies, Greenings, Blenheims, McIntoshes, Snows, Wealthies, Duchess, and Kings are varieties that cannot be excelled. Adaptation of variety to soils, care in pruning and spraying and manuring and exactitude in packing will work wonders in holding our markets. Our people crave for apples, but they are unable to get decent home-grown ones, even in our local towns and cities. Much of the educational work is up to the growers. The fruitgrowers' associations should appropriate funds for the purpose of advertising, such kind of advertising as made Sunkist oranges so popular.

YOUR SECOND SPRAY

By Prof. Caesar

NO matter what the fruit grower did about the first or dormant spray, the second or pink spray should not be neglected. On this and the third or blossom spray, generally depends the success or failure of your season's crop. It will pay you to put forth a special effort this year to get these sprays on.

My recommendations for the second application in Ontario are as follows:—

For apples, just before the blossoms open use concentrated lime-sulphur, strength 1:010 or 1:009 specific gravity = 1 gallon. Commercial to from 30 to 35 gallons water, or Bordeaux mixture, 4.4.40 formula, with 2 or 3 lbs. arsenate of lead paste or 1 to 1½ lbs. arsenate of lead powder or ¾ to 1 lb. arsenate of lime powder to 40 gallons of the liquid.

For pears, just before the blossoms open, use concentrated lime-sulphur strength 1:008 specific gravity = 1 gal. Commercial to from 35 to 40 gals. water, or Bordeaux mixture, 4.4.40 formula, with 2 or 3 lbs. arsenate of lead paste or 1 to 1½ lbs. arsenate of lead powder to 40 gals. of liquid.

HOLLYHOCKS

By Elizabeth L. Housser

HOLLYHOCKS are a well-known flower of old fashioned gardens, sometimes called Hardy Biennials or short-lived Perennials. They are simple to grow and effective in almost every garden.

The seed should be planted in May or June in shallow furrows. *Tramp* the soil down to keep the moisture around the seed which germinates rapidly.

When four leaves have formed the plants should be transplanted. Choose a sunny, well-drained location with deeply worked, rich soil. Plant three feet apart for permanent planting and keep moist and cultivated until well established. Any of the new varieties are good: Palling Belle, double pale pink; Chaters Double, all shades; Large Single, all shades.

LARKSPUR

By Elizabeth L. Housser

DELPHINIUM is one of the best plants for Canadian gardens. It is of easy culture and gives great quantities of strikingly beautiful blue blooms. Plant in May or June in shallow furrows and when four or five leaves have formed transplant to permanent place two feet apart. An excellent plan with perennials is to plant some annuals with them, the first year to cover the intervening spaces.

Delphiniums should be planted in masses against shrubbery or some dark background as the beauty of the flower cannot be seen against the blue of the sky.

The Hybrid collections are best. Some good named varieties are the following: Belladonna Seedings; Beatrice Kelway; King of Delphiniums.

A liberal use of fertilizer will reward the grower with spikes of bloom sometimes eight and nine feet high.

Annual Larkspur

This is the same type of plant as its perennial sister, but of smaller growth. It gives great quantities of bloom in pink, lavender and white as well as blue. They are beautiful for cutting. Treat as any annual.

Sales and Wants

THE FARMER'S EXCHANGE
SEMI-MONTHLY

Five Cents a Word---Per Insertion

SPRAYERS

AGENTS—MASON SOLD 18 SPRAYERS and Autowashers one Saturday; profits $2.50 each; square deal; particulars free. Rusler Company, Johnstown, Ohio. (May 15, 19)

POULTRY

CYPHERS WYCKOFF BRED TO LAY S.C. White Leghorns. Baby chicks $23.00 per 100. Safe arrival guaranteed. Hatching eggs, $10.00 per 100. Descriptive catalogue free. Cooksville Poultry Farm, Cooksville, Ont. (May 15, 19)

MAPLE SYRUP

WANTED — PURE NO. 1 MAPLE syrup. Write stating the price. Box 20, Farmers' Magazine, 143 University Ave., Toronto.

LUMBER

SAVE BIG MONEY ON LUMBER — Write to-day for our "Mill-direct-to-User" prices before ordering elsewhere. Satisfaction guaranteed or money back. Shipped anywhere. Davies Construction Company, Vancouver, B.C. (Nov. 15, 19)

PRODUCE PRICES FOR THE FORTNIGHT

Continued from page 33

the condition of the British market are not to hand, and exporters have hesitated to take hold freely, as a decision of the food administration is expected this week, if one is coming at all.

Eggs are at record prices for this season of the year, and are 7c above the corresponding week of last year. Last week they advanced a half cent in the face of heavy receipts. Export demand has competed with storage calls, and resulted in a higher price than ever before on the market at Toronto. This is not a local condition. When these expensive eggs come out of storage next fall and winter the people will just begin to learn how to pay for eggs, and, unfortunately, this will come at a time when soldiers' gratuities will be expiring, and work shutting off for the slack winter months. It may mean a hard, pinching time, in which Bolshevik ideas will find ready incubation.

Toronto is now paying 45½c per dozen for all the eggs of quality coming in, while Montreal quotes them in a wholesale way at 49 to 50c per dozen, and New York up to 58½c per dozen, with a strong feeling prevailing.

Poultry is in short supply, and about the only stuff coming to the market at Toronto is live fowls, which are readily taken up at almost any price that is asked, running up as high as 35 to 50c per pound, live weight, for good fowl, and even still higher for extra choice stuff.

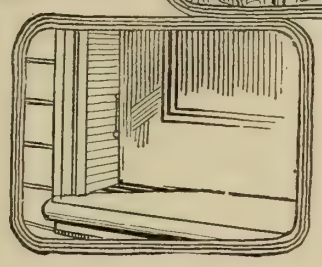
American buyers invading the potato market have kept prices moving steadily upward in Ontario during the past several months, until new records are hung up for the season. Potatoes have been bought, costing from $1.70 to $1.80 per bag, delivered in car lots at Toronto. American buyers have been operating both from Toronto and Montreal, and Ontario stuff has been going to markets as far away as Detroit, Chicago and even New York. Taking it as a whole, the year's potato business from the farmer's standpoint went much better than was expected earlier in the season.

Bean prices have shown a little improvement of late, and holders of large stocks on the central markets, who had persistently refused to buy beans for many months, have opened up again in a small way, are paying from $3 to $3.50, but they are still a bit finnicky about quality when paying even these prices.

SIX ROLLS-ROYCES EXCHANGED FOR TWO FORDS

It's a fact, strange as it may seem. The possessor of the humble Ford can now look at any car owner with hauteur and disdain. For, behold, the war has demonstrated that for "swapping" ability the Ford is in a class by itself. Lord George Wellesley, a grandson of the "Iron Duke" is the authority for this, hitherto unsuspected, value of the "jitney." He was an Aviation Officer in Egypt and, from the front, sent in a requisition to the Army Service Corps for four Ford cars to carry gasoline across the desert. In due time, he received, instead of the Fords, six Rolls Royces. Some class—and some efficiency! Six Rolls Royces for desert touring, where a heavy car would be stalled in the sand in less than no time. Lord Wellesley knew what he wanted and he proceeded to get it. He traded those Six Rolls Royces for two Fords! That is what we said "two"—six Rolls Royces for two Fords, and it seems that he drove a good bargain at that. The Ford could make easy going of the roads which were impassable to heavier cars. General Allenby has been credited with the statement that these little Ford cars were important factors in the success of the brilliant campaigns in Palestine, Egypt and Mesopotamia. Because of them, he was able to transport munitions and supplies of all kinds across deserts and sandy wastes with a speed that was marvellous. The British Government has a number of these Fords, purchased in Canada, whose shipment was cancelled on account of lack of steamer space and which are no longer needed by the army, now that hostilities have ceased. They are offered for sale at considerable reduction from the market value, and Canadians can not only help themselves by taking advantage of the opportunity but still assist the Government in disposing of these "Rolls Royce Swappers."

Expensive repairs can be avoided by taking a little pains to protect the surface of the metal trim on your buildings. Remember how it is exposed. Keep it well protected and rust won't have a chance.



If we ever stopped to count the number of feet that pass up and down the doorsteps of our homes, we would appreciate better what their surface has to stand. Once the wood gets really worn, through lack of protection, it never can be made to look as good as new. A tough coat of protection saves the surface.

THIS ANNOUNCEMENT is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the preservative and protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.

THE CANADIAN TRADE COMMISSION

CANADA Commissioner.

Why Some Furniture Never Seems to Grow Old

OLD in its associations, yes. Old in that beautiful intimate sense of affection we sometimes have for even inanimate things—but not old in the sense of shabbiness.

Protection of the *surface* is the secret of the continued good looks of furniture It is the surface of the furniture that bears the burden of constant wear. It is the surface we *see*. As long as the surface is kept protected good furniture stays good and grows more valuable yearly.

And furniture, after all, only illustrates a point.

It may be something very different—the metal trim of your buildings or the steps of your house. What use will do to your furniture, rust will do to the metal and scuffling feet to the doorsteps. Again, what these things will do the elements will do to your wooden house, or to stucco, or sometimes even cement.

"SAVE THE SURFACE AND YOU SAVE ALL."

Surface gives the first foothold to wear, rust, decay, and all destruction. The gospel of thrift as applied to the things we own is the gospel of preserving the surface. 10.

"SAVE THE SURFACE AND YOU SAVE ALL" Paint & Varnish

WOOD | PLASTER | CONCRETE | MANUFACTURED PRODUCTS | METAL | BRICK

Concrete Machinery for the Farm

Hand cement mixer pays for itself in 7 days. Write for Special Offers. Crushers, Brick, Block, Tile Machines, Power Mixers, etc. New and Second Hand Gas Engines.

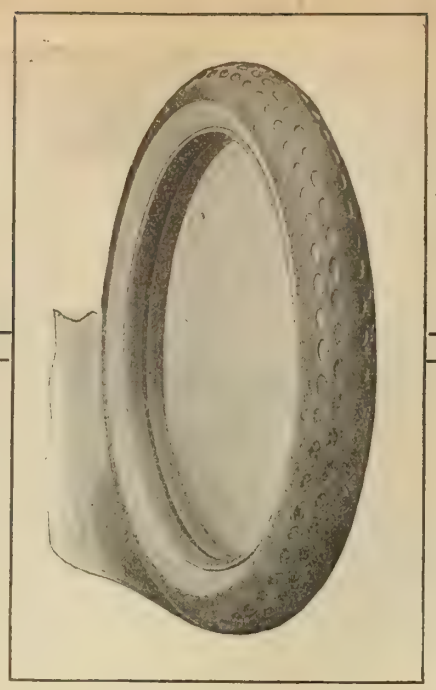
WETTLAUFER BROTHERS, Limited, 178A Spadina Ave., Toronto.

SMITH BELTING
138 YORK ST. TORONTO

When Your Ford Gets Shabby---Buy A Brantford Truck Attachment

and convert it into a *full one-ton truck*. You will be surprised at the time and money it will save you. Very easy to attach. Your Ford has given *pleasure* in the past---now make it work---turn it into a *profit*. Drop a post card to us for particulars.

BRANTFORD MACHINE & TOOL COMPANY
Brantford - Ontario



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PERSEVERING DURABILITY the kind of service wanted by every farmer motorist.

Every tire is super-size. It gives super-service, HAND MADE in wrapped tread type.

More costly to build but no extra cost to you.

No mould pinches or fabric buckles.

We make the only **30 x 3½ and 31 x 4** cords clincher in Canada.

SOLD BY BEST DEALERS EVERYWHERE

VANDER LINDE RUBBER CO. Limited
142 Weston Road, Toronto, Canada

Add to the Beauty and Dignity of Your Residence

AN "IDEAL" Lawn Fence surrounding your property will cost little and immensely improve its appearance and exterior value.

On request, we will be pleased to send illustrated booklet describing various types of "IDEAL" Lawn Fence, Gates, Vine Trellis, etc., quoting freight-paid prices ranging from 8 cents a running foot.

Ideal Lawn Fence

IDEAL FENCE & SPRING COMPANY OF CANADA LIMITED
WINDSOR ONTARIO

15

TRUCK FARMING

Inter-cropping on a Truck Farm

By F. B. HOUSSER

THE extent to which intercropping may be carried is only limited by the ingenuity of the individual grower. In Europe, where land is scarce, every conceivable combination of crops is grown together. In China it is not unusual to find as many as three different crops closely interplanted and thriving. The plan described here is one of the most common, and the method varies to suit the conditions under which the scheme is practised.

For the best results you must choose the richest and most productive strip of land on the farm. It will pay to apply as high as fifty tons of well-rotted manure or, what is almost as good, fit the land for a year or two in advance by plowing down green manures. The returns you will get at harvest time will well repay the time and money expended in preparation.

About the middle of March fit up a hot bed and in this sow broadcast, and not too thickly, the seed of some good head lettuce which you know to be popular in your nearest city market. This information can be had from any reliable commission merchant. My own investigations showed me that the Toronto market likes Cos lettuce and the variety with which we have had our best success is that known as "Giant White Cos," an English lettuce with a growing reputation in this country.

Keep the plants in the hot bed well watered and in about three weeks, when the second pair of leaves appear, transplant into finnan haddie flats or to a well-built cold frame, setting the young seedlings two by two inches apart with the soil pressed firmly about the roots. Don't worry if they wilt. Keep them well protected in the cold frames, giving them an occasional airing in the middle of the day, and they will soon straighten up and begin to grow. At first only open the sashes of the frame slightly. Expose them a little more each day that the sun shines until finally you can take the sash completely off except in the early mornings and at nights. The proper management of the frames is one of the most important factors in promoting early growth.

About the 1st of May the plants will be ready to be set out in the field. Work and pulverize your soil till it looks like an onion bed. Mark off rows three feet apart and set from fifteen to eighteen inches apart in the rows.

For this operation it is well to wait for a cloudy day. Just before a rain is the ideal time for transplanting. If a dry spell is in progress at the psychological moment, plant in the afternoon and water with about a tea cup to each plant immediately after setting. An excellent little plant setter may be bought for about $3.00 which works on the same principle as a corn planter and a little practice will make one fairly expert which will also do away with a back-breaking job. You will find growing lettuce no harder work than the raising of any other garden crop.

The second crop we are going to grow is late cabbage. There are as many varieties of cabbage as there are of lettuce, but the old reliable "Danish Baldhead" is the one that will suit itself to almost any conditions and its keeping qualities are unexcelled.

If you intend to follow the transplanting method with cabbages they should be started not later than May 15th, in the latitude around Toronto, and transplanted about the first of July, but my own experience is *that it is better to sow them in the field just as you would with onions or carrots.*

Growing Cabbage

In the middle of the rows between the lettuce plants sow the seed fairly thickly. Regardless of what the text books say I have found it wise to sow as much as four pounds of seed to the acre where the cabbaze aphis is troublesome. In many sections the cabbage aphis (Aphis brassicae) attack the young plants the moment they break through the ground, especially in sections where large quantities of cabbage are raised annually. They will destroy a crop in a few days unless checked and hence the reason for sowing thickly. A little tobacco dust applied around the plants as soon as the rows are visible will be found effective. The dust can be bought for from four to five cents a pound from wholesale tobacco houses.

You now have two crops growing side by side in such a way that the rows are spaced one and a half feet apart. There is nothing more to do but cultivate once every ten days until the cabbages are ready to be thinned which will be about the first of July. They can be thinned out like turnips to 18 inches apart and the culls may be sold or fed to the pigs.

Your lettuce should by this time be ready for cutting. It is important to watch the inside leaves to insure against heating, which is liable if the season has been unusually wet. The heads are cut with a large knife and packed in orange crates or slatted boxes, placing, generally speaking, about three dozen heads in a crate. Some of the outer leaves should be left on to prevent the hearts wilting in transit. An acre of heads planted 18 in. by 3 in. will harvest 9,680 plants. Giant White Cos sold on the Toronto market in July 1918 for $1.00 a dozen.

The cabbages will be ready in November and, unless you wish to chance storing them they can be shipped direct from the field. Fifteen tons to the acre is considered an average yield selling last fall from $10.00 to $15.00 a ton. A much higher price can often be got by storing cabbages till spring, but I have not found it satisfactory.

The following figures are a conservative estimate of returns based on the yields mentioned in this article and include shipping expenses to a man operating within twenty-five miles of Toronto.

ONE ACRE.

Expenses, 1918 Prices

4 lbs. cabbage seed	$ 12.00
10 oz. lettuce seed	2.00
50 tons manure at $3	150.00
268 crates at 15c	40.20
Thinning, cultivating and harvesting	75.00
Express and freight	80.00
	$359.20

Receipts.

806 doz. lettuce at $1	$806.00
15 ton cabbage at $12	180.00
	$986.00
Net Profits	$626.80

Notice that these figures include the application of 50 tons of manure at $3.00 a ton. This price represents the cost of bringing manure from the city and the use of two teamsters at $5.00 a day for unloading. The average farmer can get manure on his own place for much less than this. If green crops are used you may add $125.00 to the above net profit.

The one thing most necessary to make a venture of this kind a success is to know your market. Have your lettuce sold before it is cut and make the agreement in writing.

Sore Eyes **Granulated Eyelids,** Eyes inflamed by exposure to **Sun, Dust and Wind** quickly relieved by **Murine Eye Remedy.** No Smarting, just Eye Comfort. At Your Druggist's 60c per Bottle. **Murine Eye Salve** in Tubes 25c. For **Book of the Eye Free** Write **Murine Eye Remedy Company, Chicago**

DOES FEEDING COWS PAY?

By G. B. Curron, B. S. A.

During the past week, I examined the books of one of our supposedly best cheese factories which has 102 patrons owning 758 cows. These patrons delivered 2,595,946 lbs. of milk to the cheese factory and averaged 3,517 lbs. per cow. The cash return per cow was only $65.00. The highest return per cow per herd was $85.00, and only five herds gave a return of more than $75.00 per cow. Of course, these returns will be added to by the sale of some milk during the winter and the calf, but I am safe in estimating that the cost of wintering the cows will be double the returns from the winter milk and the calf, as in this section the cows freshen in the spring and dry up as soon as the cheese factories close. Taking these figures, it plainly proves that farmers cannot make any money from the cheese factories. In fact, if they had to go out and pay $100 for a cow, and then add the cost of the pasture and milking, and have to pay for the labor, there would be no profit in keeping the average cow. I have a plan as follows: to tabulate the farmers' herds by the returns from the cheese factories and then to visit each farmer, examine his cows, ask him how he feeds and cares for them, and note particularly whether he uses purebred sires. If the tabulation of figures would show that the highest producing herds were owned by farmers using purebred sires, it would prove that purebred sires were necessary to make a profit. Also if the highest herds were better fed, it would prove that good feeding pays.

GRIEVING COWS

An Essex *Daily Mail* correspondent says that he witnessed a strange sight in which a herd of cows, an old bull, and a few calves took part in a meadow.

A cow that had recently calved died in the night, and lay stiff on the frosted grass beneath a tree. During the day cows roamed near the place and stopped to smell and lick the side and face of the dead animal. Not till the morning did the knacker's cart arrive to carry the body away.

When the vehicle was drawn to the spot the whole herd came slowly up and stood round watching intently, with heads down and an indescribable expression, which seemed half questioning and half sympathetic, in their eyes. Seven of them and the old bull came up and licked the dead cow's face, in one instance as it was being hoisted into the cart. When it was taken away they stood watching it to the far side of the meadow and through the gate till they could see it no longer. Then they smelt all over the spot where it had lain.

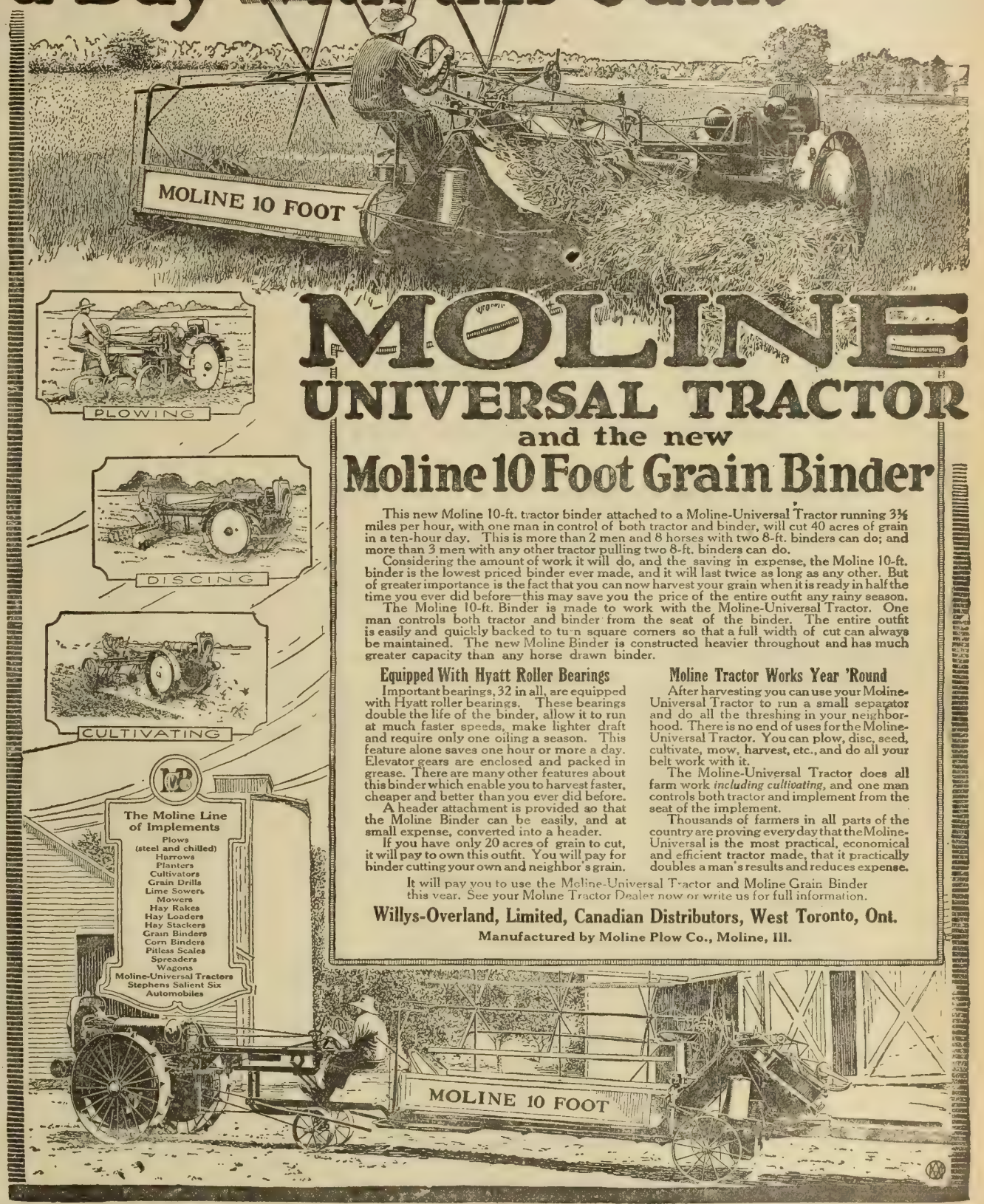
What one would like to know is whether the behaviour of this herd really signified the sympathy—even sorrow—that seemed apparent? Did these animals feel for their companion and grieve for its fate?

POISON GAS FOR THE FARMER

The British Board of Agriculture are conducting a series of experiments with the object of ascertaining whether it is possible to find a commercial use for the poison gas now lying idle on the hands of the Government. It is thought that it may play some part in assisting agriculturists as a plague killer. To this end an experiment was tried a few days ago with chorine as a rat killing agent. It is reported that it was successful in that it thoroughly destroyed the rodents, but the soldiers operating the gas had to wear their masks, and the unprotected onlookers had to keep thirty or forty yards away.

The more deadly form of true "poison gas" has been suggested as a caterpillar slayer, and in the hands of an expert good results might be obtained, but there is too much danger both to vegetation and to human life for it to become commercially useful.

One Man Harvests 40 Acres a Day with this Outfit



MOLINE UNIVERSAL TRACTOR

and the new Moline 10 Foot Grain Binder

This new Moline 10-ft. tractor binder attached to a Moline-Universal Tractor running 3½ miles per hour, with one man in control of both tractor and binder, will cut 40 acres of grain in a ten-hour day. This is more than 2 men and 8 horses with two 8-ft. binders can do; and more than 3 men with any other tractor pulling two 8-ft. binders can do.

Considering the amount of work it will do, and the saving in expense, the Moline 10-ft. binder is the lowest priced binder ever made, and it will last twice as long as any other. But of greater importance is the fact that you can now harvest your grain when it is ready in half the time you ever did before—this may save you the price of the entire outfit any rainy season.

The Moline 10-ft. Binder is made to work with the Moline-Universal Tractor. One man controls both tractor and binder from the seat of the binder. The entire outfit is easily and quickly backed to turn square corners so that a full width of cut can always be maintained. The new Moline Binder is constructed heavier throughout and has much greater capacity than any horse drawn binder.

Equipped With Hyatt Roller Bearings

Important bearings, 32 in all, are equipped with Hyatt roller bearings. These bearings double the life of the binder, allow it to run at much faster speeds, make lighter draft and require only one oiling a season. This feature alone saves one hour or more a day. Elevator gears are enclosed and packed in grease. There are many other features about this binder which enable you to harvest faster, cheaper and better than you ever did before.

A header attachment is provided so that the Moline Binder can be easily, and at small expense, converted into a header.

If you have only 20 acres of grain to cut, it will pay to own this outfit. You will pay for binder cutting your own and neighbor's grain.

Moline Tractor Works Year 'Round

After harvesting you can use your Moline-Universal Tractor to run a small separator and do all the threshing in your neighborhood. There is no end of uses for the Moline-Universal Tractor. You can plow, disc, seed, cultivate, mow, harvest, etc., and do all your belt work with it.

The Moline-Universal Tractor does all farm work *including cultivating*, and one man controls both tractor and implement from the seat of the implement.

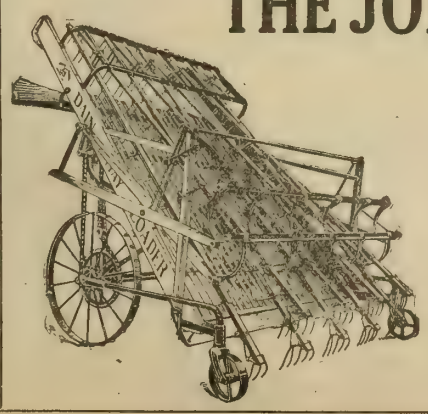
Thousands of farmers in all parts of the country are proving every day that the Moline-Universal is the most practical, economical and efficient tractor made, that it practically doubles a man's results and reduces expense.

It will pay you to use the Moline-Universal Tractor and Moline Grain Binder this year. See your Moline Tractor Dealer now or write us for full information.

Willys-Overland, Limited, Canadian Distributors, West Toronto, Ont.

Manufactured by Moline Plow Co., Moline, Ill.

THE JOHN DEERE-DAIN HAY LOADER



"The One-Man Hay Loader"

Many of our competitors have tried to imitate the exclusive working characteristics of the **Dain Rake-Bar Hay Loader**, but none have acquired outstanding features of this machine. See your nearest John Deere Dealer, or write and get full particulars and information direct from us. Investigate the **Force Feed** of the **Raker Bars** which make it easy for one man to build the load and also handle the horses. Also the **Automatic Throat Opening** which adjusts itself to handle light or heavy hay from swath or windrow without choking. It rakes clean. Has your neighbor got a Dain? Ask him about it.

John Deere Mfg. Co., Ltd., Welland

DETROIT

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Training for Head and Hand

Trained men needed everywhere to test, repair and give expert advice on care and handling of automobiles, trucks and tractors. Big money for M. S. A. S.—Detroit trained men. Good jobs or independent business await our graduates. Opportunities unlimited.

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Our Course will teach you how in a few short weeks. Most complete, comprehensive and up-to-date Course known. Wholly practical. No job too hard for our graduates. Every phase of work covered. Actual experience given on dozens of different cars. Entire equipment best obtainable. Instruction includes complete Tractor Course. Brazing, Welding and Tire Repairing taught separately.

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OUR GRADUATES IN DEMAND

Here you get the benefit of finest co-operation of biggest factories. They know the thoroughness of our Course and gladly help our students in every way possible. Almost daily we have calls for graduates to fill responsible positions. School open all year. Enter classes any time. No need to waste or lose a moment.

MONEY BACK GUARANTEE

We guarantee to qualify you for a position as chauffeur, repair man, tester, demonstrator, auto electrician, garage man, automobile dealer, or tractor mechanic and operator, paying from $100 to $400 monthly, or refund your money.

Big Factories Endorse Our School

They know what we do,---how we teach and the type of graduates we turn out and give our students unusual assistance. Every instructor an experienced man,---one who knows and is able to teach others.

KING MOTOR CAR COMPANY

Builders of King Cars — Detroit, U.S.A.

Replying to a recent letter addressed to Mr. Artemas Ward making inquiry as to the reputation of the Michigan State Auto School, will say that as far as we know all Detroit Automobile Manufacturers endorse the work they are doing. It is managed very efficiently and they have been turning out some pretty good men for the Automobile Industry and cannot see any reason why you should hesitate about taking a course with this institution. Yours very truly,

KING MOTOR CAR COMPANY

GET FREE CATALOG

Tells all about "The Old Reliable School" located in "the heart of the Auto Industry." Or, better still; jump on the train and come to Detroit as Hundreds do. Your fare refunded if everything not as represented.

MICHIGAN STATE AUTO SCHOOL

A. G. ZELLER, President

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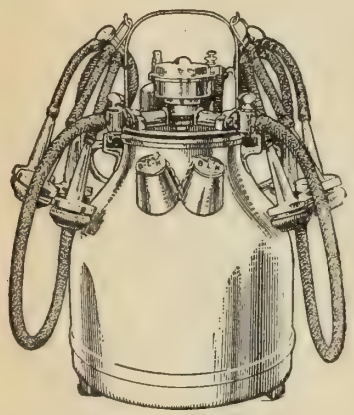
DETROIT THE HEART OF THE AUTO INDUSTRY

44 AUTOMOBILE FACTORIES — 140 ACCESSORY FACTORIES

Had Thirty Cows— Intended Selling



[Good for the Herd

He was tired of the drudgery of hand-milking, tired of hired help always complaining. So he thought of selling his thirty cows.

But instead he bought a

BURRELL B-L-K MILKER

Now he has increased his herd to 50 cows. He is contented, so is his hired help. He lets them off Sunday and with his boy does the milking easily.

That is an oft-repeated experience. One average man with two 2-cow Burrell Milkers can milk from 24 to 30 cows an hour, do the work of three hand milkers, and do it well.

Write for the experience of others to whom you can write.

D. Derbyshire Co., Limited - Brockville, Ontario

WOOL

Before shipping your wool write us for prices. We can pay you the highest possible prices as we have connections with the largest users of Canadian wool. However small your lot may be, drop us a line, and we will send you our list. We supply sacks, etc., and will give you prices F.O.B. shipping point, sending you cheque to cover immediately.

The Canadian Wool Co., Limited

103 Front Street West, Toronto

Auto Trucks and Tractors

What Size Tractor Shall I Buy

By Prof. J. McGREGOR SMITH

WE discussed in the last issue the important question of the rating of tractors and we tried to point out the great importance of having a uniform system, which we do not have at the present time. Now we come to the equally important question—What size of tractor shall I buy? The tractor must be an all-round machine, if it is to be of the greatest service to the agricultural industry. We must consider its adaptability to belt work as well as its ability to plow.

In trying to answer such a question the writer knows that it is impossible to give one that would meet the requirements of everyone. We all have our own opinions, and since there are a number of very desirable tractors on the market that can give a very good account of themselves, we have decided to lay before our readers certain data which may help the individual to attack his own problem.

The actual size of the tractor will depend upon your system of farming. If you plan to hire an engineer at a wage of from $100 to $200 per month with board, you should have nothing smaller than a 4-plow outfit. On the other hand, if you plan to operate it yourself, or with ordinary unskilled labor, then a 2-plow or, better, a 3-plow outfit may be more desirable. Many farmers are getting better acquainted with the internal combustion engine through the automobile, and it may be better for them to operate the engine themselves and hire cheaper labor to handle their teams. Many farmers who are engaged in mixed farming, and using horse-power, could use a small 2-plow outfit to great advantage in heavy work of spring and fall plowing, breaking and summer fallowing in hot weather.

For average conditions we must have an all-round tractor, good on the drawbar and good on the belt. We will also assume that we should have the following classes to choose from:

Class 1.—A tractor that can pull two 14-inch plows at a depth of 6 inches at a speed of 2½ miles per hour. This means from 8 to 10 drawbar horse-power.

Class 2.—A tractor that can pull three 14-inch plows at a depth of 6 inches at a speed of 2½ miles per hour. This means 12 to 15 drawbar horse-power.

Class 3.—A tractor that can pull four 14-inch plows at a depth of 6 inches at a speed of 2½ miles per hour. This means 18 to 20 drawbar horse-power.

Class 4.—A tractor that can pull six 14-inch plows at a depth of 6 inches at a speed of 2½ miles per hour. This means 25 to 30 drawbar horse-power.

We will eliminate Class 4 because it does not concern the average farmer; the large farmer and threshermen will have to consider this class.

There are still many things concerning tractors that are confusing to the farmer, and dealer too, for that matter. The one outstanding point, if we read correctly between the lines of the question, is the relationship between horse-power, drawbar pull, and the number of bottoms that can be handled to advantage. We have discussed in these columns the "horse-power" problem in detail, so that it is not our purpose at this time to burden you further with definitions and formulae concerning foot-pounds of work per minute. Much discussion can arise on this question, and the resulting debate could go either way. We wish to be absolutely fair in the presentation of our figures. Our estimates may be conservative, but it is better to err on the safe side, as the number of plows pulled does not necessarily mean the greatest efficiency.

Let us turn, first, for a few moments to the experience of the farmers in the United States. Bulletin 719 sums up the whole situation very well in one paragraph: "The 4-plow size seems to meet the tractor requirements of the average farm in Illinois; it enables plowing to be performed at a much faster rate than is usual when horses are employed. Man labor is also reduced when using this size tractor, as one man attends to four plows at one time, instead of two, as is ordinarily the case when horses are used. Furthermore, this size of tractor is generally powerful enough to operate all the machines which are so commonly found on the average farm, including the ensilage cutter and medium-sized thresher. At the same time it is not too expensive in operation to prohibit its use for many odd jobs which do not demand a great deal of power. These facts probably account for its popularity.

Tractor investigations were conducted by the *American Thresherman* in 1915 and again in 1917. The reports were tabulated as received and came in from the Canadian Northwest to Texas, and, averaging over 90 reports, we find the average repair bill was $50, while 21 machines averaged $13.92 annually. The relationship of the rated horse-power to the work done in 10 hours' plowing:

Rating of Tractors.	Acres Plowed.
5-12	6.3
8-16	6.6
10-20	7.7
12-25	9.0
15-30	11.8
25-45	19.2
30-60	21.0
40-80	25.75

The figures seem low in some cases and high in others, but they represent field conditions, and, of course, some people call 16 hours a day, in which case the average can easily be increased.

Go to any local demonstration you can attend, and see what each machine can do. Compare the soil they are in with your own and a very close estimate can be formed of what you may expect. Do not overload. Take off a plow and put on a harrow and you can probably go along at a higher speed. It still seems to be the ambition of some owners to see how much they can get the engine to pull. Stick it, if possible, is their ambition. It is a short-sighted policy.

Here is an engine that has two speeds, 1.85 and 2½ miles per hour. Let us suppose that it is in land where it has to labor very hard to pull three plows in low gear. In fact, it works something like this: the engine pounds and almost stops, the clutch is pulled and shoved in again as soon as the speed is up, then a plow is pulled just as the engine dies. After cranking 15 minutes off it goes again and the same operations are repeated. A waste of time. While by taking one plow right off and perhaps attaching a harrow, it can go right along in high gear. Let us suppose it plowed continuously for 10 hours, what would be the difference in the amount of work done?

3 plows at 1.85 M. P. H. in 10 hours = 7.84 acres plowed.

2 plows at 2½ M.P.H. in 10 hours = 7.09 acres plowed and harrowed.

Of course we refer to case where the engine was overloaded with three plows, there are parts where it could pull three plows very easily.

The reader must now be convinced that this subject is one which it is very important forhimto grasp clearly. Every short course in agriculture should set aside one or more sessions for this work alone. Every operator should take advantage of any opportunities offered. Many companies are to be congratulated on the splendid assistance they are giving in this kind of educational work. They are rendering a real service. It is

more important to keep all the engines working than it is to sell more machines, is the policy of one firm. Those who do not think this way—get busy.

It has been suggested by the Society of Automotive Engineers that tractors be rated at 80 per cent. of their power. It is evident that when some do so, and others do not, that it places conservative firms at a disadvantage when dealing with many people.

Every tractor operator should possess the "Tractor Field Book," published by the *Farm Implement News* of Chicago. It costs only 25 cents. It contains the specifications of practically every tractor made and sold on the North American continent. On looking over the list we picked at random three tractors from classes which have rated drawbar horsepower of 10, 12 and 15, respectively, at the same time taking into account the number of plows recommended, the number of pounds pull they are guaranteed to exert at a given speed as set forth in the manufacturers' specifications. The above ratings fall within the limits of the two first classes outlined below, and in them the majority of problems will come. Some ratings you notice are conservative; others are not. It is the number of pounds that can be pulled at a certain speed that counts. Remember, also, that a 14-inch plow may require a pull all the way from 200 pounds to 1,600 pounds, depending on the soil and its conditions, as well as the shape of the moldboard, set and general adjustment of the plow. If you are in sandy loam you can probably do better than we estimate, while if you are in heavy gumbo you will have to be satisfied with less. Let us say we must have 5 drawbar horse-power for every 14-inch plow. Some land is rolling, some is light, some is heavy, therefore no figure can be given that will be infallible.

We will now consider the following speculations for example, where we read: "A 2-plow tractor with two drive wheels and two steering wheels; 3,000 pounds maximum pull at plowing speed, two speeds forward, 2⅜ and 4 miles per hour." We have in each case taken the speed closest to 2½ miles per hour as plowing speed. This is 220 feet per minute. See table on next page.

The last column in each case shows actually the guaranteed pull, which decides the drawbar horse-power. You will notice that A in the first list develops mort than A in the second, also that B in the second develops more than A in the third, and practically the same as C in the third table.

From the same list of specifications let us see what each is recommended to do in threshing:

Rating	Size of machine recommended
A 10-20	26 inch thresher.
B 10-20	24 inch by 40 inch.
C 10-18	None recommended, probably a 20 inch or 22 inch machine
A 12-25	24 inch machine.
B 12-25	24 inch machine.
C 15-25	22 inch by 36 inch.
A 15-30	Threshers up to 32 inch.
B 15-30	28 inch by 48 inch.
C 15-30	28 inch by 43 inch.

Again we find a difference of opinion, and since threshing conditions in the West are not the easiest, err on the safe side and take into account what the experience of others has been in your neighborhood.

Before closing we would again emphasize the importance to the individual purchaser of carefully studying out the tractor problem for himself. The best place where this may be done is at the exhibitions, and particularly at those exhibitions where tractor demonstrations are a part of the show.

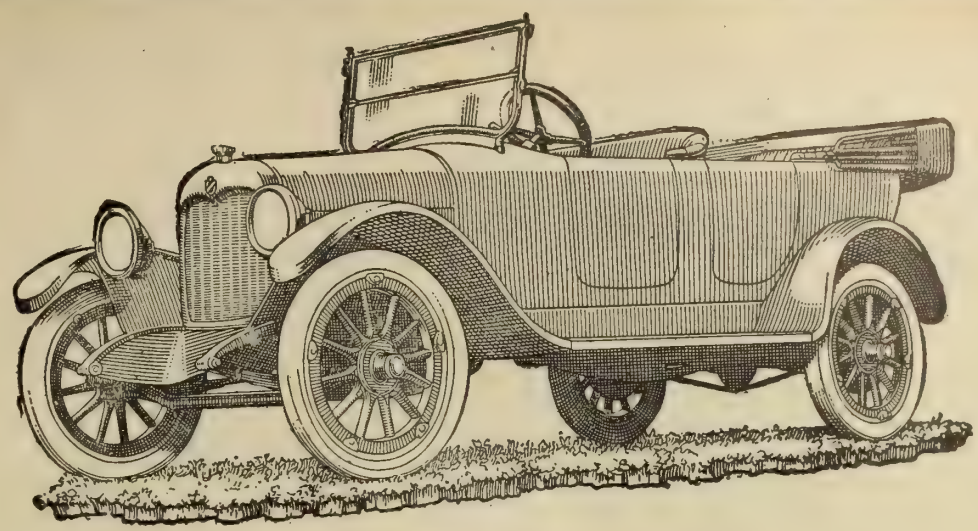
In conclusion, let us quote the following very good advice:—

Price is what you pay for a thing when you get it. You pay it once.

Cost is what you have paid for a thing when you are done with it. It includes original price, running expense, repairs, depreciation, trouble, loss of time, loss of service.

Value is what you get out of a thing while you have it. It is measured by economy of operation, freedom from repairs and trouble, constant service and length of life.

Moral.—Buy from a reliable company that is capable of rendering you service of the best class, when necessary.



The Maxwell is a sensible buy for farmers—Why?

FARMERS more than any other class buy the Maxwell. They buy it for many reasons. But all these reasons come down to the one fact—the Maxwell fits the farmers' needs better than any other car.

It is a big, roomy, comfortable car. A family car. It is light enough to give the utmost economy in tires and gasoline. It is strong enough to stand country road driving. It is powerful enough for any rough going.

And it is completely equipped. No "extras" to buy.

But, above all, the Maxwell is a dependable car. Five years ago the chassis was designed—for rugged simplicity. Then Maxwell after Maxwell was built on this original plan—over 300,000 of them.

This chassis has been perfected, of course; but not changed. It was *right* five years ago. It is *right* to-day. Over 1000 refinements have been made. To-day's Maxwell is the best car our engineers *could* produce for farm service.

And this dependable chassis has been robed in new beauty. 24 refinements in appearance in this year's model make it a car you'll be proud to own. Beautifully upholstered. Distinctive in style.

Not the least of the sensible reasons for buying the Maxwell, for getting Maxwell value, is Maxwell Service. There's a Maxwell dealer near you—anywhere in Canada.

$1275 f.o.b. Windsor, Ont.

Maxwell

More miles per gallon
More miles on tires

MAXWELL MOTOR CO. OF CANADA, Limited, WINDSOR, Ont.

WE BUY GINSENG

both Wild and Cultivated at highest Prices. If you want reports on Fur or Ginseng, send for free quotations containing full particulars.

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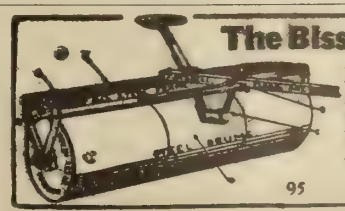


The Bissell Steel Roller has a rigid steel frame—no wood whatever. Large roller bearings and strong 2" axles insure durability and great strength. The Bissell is a 3-drum Roller of good weight, built to stand hard usage and give great service. Write Dept. Y for free catalogue.

95 T. E. BISSELL CO., LTD., Elora, Ont.

We have doubled our factory capacity and are determined to supply our customers far and near. See also advt. on page 43.

Massey-Harris

Reliability its Great Feature

The great feature of the Massey-Harris Mower is that it can be depended on to go through Haying without a hitch. It matters little how many other features a Mower has if it gives out, for any reason, during the Haying Harvest. The Massey-Harris Mower removes the fear and worry of having trouble with your Mower at that time. So in choosing a Mower get one you can depend on—the Massey-Harris.

The features that make the Massey-Harris thoroughly reliable are its strong, sturdy construction, giving durability, easy-running with the absence of side-draft altogether. It is easy to handle, a new and improved Foot Lift enabling the operator to raise the Bar easily and there is no sagging at the outer end. It cuts clean and handles all kinds of crops.

Cuts the last Swath as certainly as the First.

MASSEY-HARRIS CO., Limited

Head Offices—Toronto, Ont.

Branches at

Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton.

***Transfer Houses*—Vancouver and Kamloops.**

Agencies Everywhere

Continued from page 41

Rating	Plows recommended	Pounds Pull	Speed M.P.H.	Power which they will develop from the figures given.
	Tractors With a Drawbar Horsepower of 10.			
A 10-20	3	2650	2	14-2/15
B 10-20	3	1800	2-1/2	12
C 10-18	2	1800	2-1/3	11-1/5
	Tractors With a Drawbar Horsepower of 12.			
A 12-15	3	2000	2-1/4	12
C 12-25	4	2800	2	19
B 12-25	3	3000	2-3/8	14-14/15
	Tractors With a Drawbar Horsepower of 15.			
A 15-30	4	3000	[illegible]	16
B 15-30	4	2350	2.4	15-1/25
C 15 30	[illegible]	3000	2.4	19-1/5

Caring for Our Farm Machinery

Continued from page 8

Those that will take off the tar will also take off the finish.

Cleaning Car Top

After the body of the car, the next in importance is the top. How a top shall be cleaned depends on the nature of the composition of which it is composed. As mohair is quite common, the principles may be illustrated with this material. A great many people clean mohair tops with gasoline. They think that since mohair is a cloth that gasoline should be the agent to get the spots out.

Gasoline will take the spots out, all right, but in doing so the waterproof qualities are destroyed. Between the outer and inner surfaces of the top there is placed a thin layer of rubber to keep the top waterproof. When gasoline comes in contact with this rubber it takes just a few moments to rot it. The mohair itself is not waterproof, so that, after cleaning the top with gasoline, the next rain will come through easily.

The way to clean a mohair top and, as a matter of fact, a great many others, is with lukewarm water and castile soap. It is very seldom that a spot will occur in a top that cannot be removed in this way. If other spots do occur, the one rule to remember is not to use materials that will attack rubber. Once the rubber interliner is gone the top is of little use as far as waterproof shelter is concerned.

The Disc Harrow

At the close of the season or when the disc harrow is not in use, if stored under a shed, the disc gangs should be run upon boards so the discs may not become embedded in the ground. The implement should be cleaned carefully of all accumulations of soil, and discs greased with a heavy grease to prevent rust. The protective covering of paint should be renewed at the proper time. Especially is this true of the wooden parts.

Looking After the Plow

The plow is the basic tillage tool, the fundamental farm implement. It is not merely a tool for inverting the furrow slice, but it is the most efficient pulverizer of the soil in use. As the moldboard turns the furrow, each particle of soil is forced to slip against the particle adjoining, a process which results in a tilth that no other single operation approaches. The general impression prevails that the plow is a simple tool, requiring but little adjustment and less care. This is far from the truth, however. Without question it is the most complex tool on the farm, in that it requires the greatest skill for adjustments, the grain-binder and the gasoline engine not excepted. More effort has been expended in the slow process of development of this seemingly simple tool than in that of any other implement on the farm. Careful study of its construction, adjustment, and use will be amply rewarded.

The Mowing Machine

In regard to the mowing machine, tilting, hand, and foot lever connections, seat fastenings, and draft connections should be gone over to see that all fastenings are tight, lock nuts and cotter keys in place, and parts weakened by wear replaced. Special attention, especially in hilly regions, should be paid to draft and neck-yoke connections. On some machines the neck-yoke is fastened to the tongue by eyebolts and riveted in place by washers. Through wear and exposure to elements these connections may be worn so much that while normally appearing safe they may give way at an inopportune moment and a serious accident to horses or operator result. An efficient operator of any machine acquires the habit of inspecting it frequently to discover loosened parts, lack of lubrication, hot bearings, etc.

The Self-Binder

In the care of the binder the tilting lever and connections, binder shifting levers, bundle carrier trip, butt adjuster lever, and reel shifting lever should be examined to see that they work freely and positively, that those parts showing excessive wear are renewed and all fastenings are tight. The main frame should be gone over to see that all connections are tight. Broken or bent frame braces should be renewed or straightened. Draft and seat connections should be examined to see that all are tight and that all lock nuts and cotter keys are in place.

During the harvest, when it may not be convenient to put the binder under cover at the end of a day's work, the binding deck, elevator, and platform canvases should be protected from rain and dew with a tarpaulin, securely fastened down so that gusts of wind will not expose these parts to the elements.

The binder attachment proper is a somewhat complex piece of mechanism, yet with a little study of the particular machine in hand it is mastered easily. In replacing broken, worn, or bent parts of the binder attachment, bear in mind that all moving parts must work at the proper time and in unison with other parts. With this in mind, before removing any parts, examine the attachment for any timing marks which have been placed thereon by the manufacturer. These usually are projections cast on a pair of opposite cogs in gears meshing together, or may be some symbol stamped into the metal itself. If no marks can be found, difficulty in assembling may be obviated by making time marks with a small, sharp cold chisel. A good mechanic in taking down any piece of machinery does so in a systematic manner, with due regard to the relation of the parts, so that in assembling bolts and attachments are put back into the original position. If such care is observed, the original bearings are preserved and parts do not become loosened as readily by use.

PLOUGHING MATCH AT OTTAWA

OCTOBER 14th, 15th and 16th are the dates set for the big Ploughing Match, Tractor and Farm Machinery Demonstration to be held on the Central Experimental and Booth Farms, Ottawa, under the auspices of the Eastern Ontario and Western Quebec Ploughmen's Association. A large number of tractor firms have already definitely signified their intention to be present to take part in the Demonstration, and in every way prospects are exceedingly bright for a most successful event.

PASSED AS A FLYER
—THO' PLUMP

Continued from page 11

"Sure," and I started to time myself.

"Here, my good fellow, *I'll* time you," he said, but I did it, too, not that I doubted the old boy's fairness, but I told him I didn't want to do it too long, and burst. I quite pleased him by holding my breath for 100 seconds; he said 60 was quite good.

Then he tested my heart, lungs, and took my pulse, while I was in a horizontal position. I then stood up, and was told to raise my arms high above my head, and lower them until my finger tips touched my toes, without bending my knees, and repeat four times.

This was *some* trick for yours truly. I'm not quite as bad as the rotund *Mr. Cobb, who hasn't seen his feet, so they say, since* 1912, but I just barely managed to do this little stunt without "bursting" anything.

Then my pulse was retaken, and had gone up from 80 to 106.

This appeared to conclude my tête-a-tête with this old chap, and I found out the examination was a sort of to-be-continued-in-our-next, as I was told to dress and return after lunch.

I dined across the Strand at Romano's and returned a little ahead of time to get in before the crowd. The next specialist was willing to have me clothed and in my right mind, and began with a thorough examination of my ears, nose and throat interiors. He extracted the information that when I was seven I had my tonsils out, and my adenoids out in sundry operations around the age of fourteen.

He stood me in a corner and went to the far corner of the room himself, about twenty feet away, while he whispered sweet nothings in my direction. He had instructed me:

"Repeat after me *exactly what I say.*" He whispered:

"What did you have for lunch?"

"Soup, spaghet——"

"Remember what I told you," he shouted. *"Repeat."*

I quickly repeated several sentences to his satisfaction, and apparently he found my hearing quite keen enough; he implied it was exceptionally keen.

Next, I stood up in front of a desk, on which stood a tuning-fork, upright on a flat board, though not fastened to it in any way. He told me to lift up this board and tuning fork, shoulder-high, first with one hand, then with the other, without over-balancing the tuning-fork, which was standing precariously on its own base.

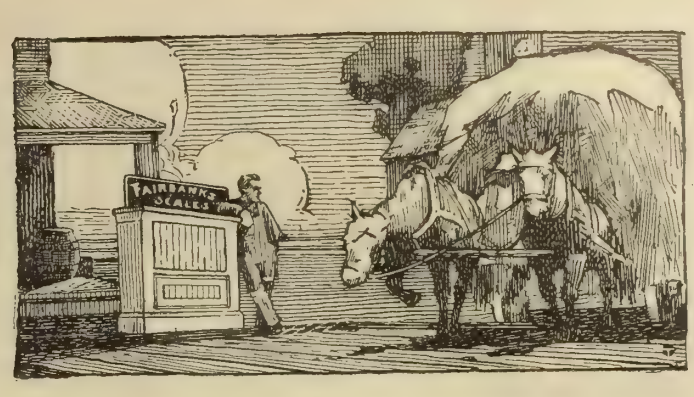
This having been done to his satisfaction, he pointed out a seam in the carpet, and told me to walk that, first putting down one foot, then the other directly in front of it, so that the heel of one foot each time was touching the toe of the other; suddenly he would say "Stop!" and order me to balance on the ball of one foot. Then, I had to turn around and walk the other way, and later do it backwards.

The next little stunt was to stand on the ball of one foot, close the eyes, and retain the balance for a minute. You have to be sober to do this—try it some time yourself. Several other little tricks of this nature had to be performed—all designed to test the steadiness of one's nerves.

There was, finally, another anxious wait of an hour or two, but I got the certificate which permitted me to train as a "birdman."

INSURANCE GIVES A DOUBLE SERVICE

An insurance policy contains within itself the power to perform two functions and, if kept alive, achieves either one or the other. It is essentially protective in character, which means that, if the assured dies, his dependents receive its face value—obviously an amount far in excess of any saving through the medium of other investments. But it is also of service to the assured himself, for, should he live, it becomes in time a source of income, increasing in value as the years go by. In both directions it is capable of doing most necessary work and the combination of powers is absolutely unique in the field of investment.



Fairbanks Wagon Scales Guarantee Correct Weight

Fairbanks Wagon Scales have become an institution wherever scales are used. No matter how small the town or village if there is hay, coal or livestock to be weighed Fairbanks Wagon Scales are the correct weighing outfit.

Fairbanks Wagon Scales offer a paying investment to the hay and grain dealer, to the local co-operative society, to the livestock man in addition to giving fullest satisfaction to the farmer. Capacities 3 to 10 tons, with beams in gradations and standards as required by the purchaser. Extension beams if desired. Platforms 8 x 14 to 7 ft. 11 inches x 22 ft. Equipment does not include foundations or timber.

Fairbanks Pitless Scales are the most convenient type for the farmer, contractor or quarryman. Capacities 5 and 6 tons.

Write today for full information.

12

The Canadian Fairbanks-Morse CO., LIMITED

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Get Longer, Better Wool

Shear with a machine and leave no second cuts nor scar the sheep. Use a Stewart No. 9 Ball Bearing Shearing Machine. Gets 15% more wool easily and quickly. Removes the fibre completely, making it longer and better selling. Leaves a smooth, even stubble for next year's growth. Machine soon pays for itself. If dealer can't supply you send us his name. Write for catalog.

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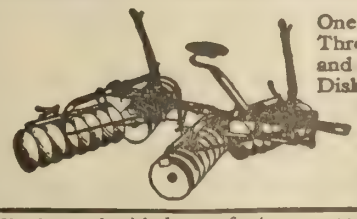
BISSELL Double Action Harrows will thoroughly cultivate and pulverize any soil. One Harrow is Out Throw; the other is In Throw. They are simply constructed, rigid and durable. The Gangs are flexible and the Disk Plates are so designed that they "hang" right into the soil. Bissell Harrows are built in sizes and weights suitable for horse or tractor use. Write Dept. Y for free catalogue. 98



T. E. BISSELL CO., LTD., Elora, Ont.

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"MACDONALD"
12-24 KEROSENE TRACTOR

"Built, Tested and GUARANTEED by a Reliable Old Canadian Company"

The "MacDonald" is the result of a long, careful study of tractor design and requirements.

Simple, Powerful and Efficient.

SPECIFICATIONS

Motor—4 Cyl., 4 Cycle, 4¾ x 6", 800 rev., 31 H.P.
Fuel—Gasoline or Kerosene.
Fuel—Capacity, 20 gallons
Ignition — Dixie Magneto Impulse Started. Carburetor—Linga.
Lubrication—Splash and pump system.
Hyatt Roller Bearing.
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Pulley Speed—200 to 800 revolutions.
Drive Pulley—14" diameter.
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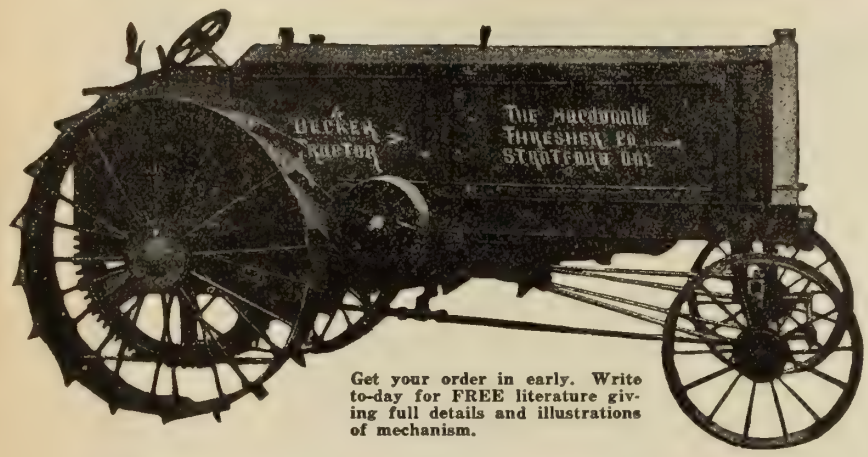

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THE MACDONALD THRESHER CO., LTD.
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Haying Waits For No Man

TO GUARD against possible loss be prepared to mow, rake, ted and load your crop from hayfield or meadow at the proper moment.

For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be real economy to buy new machines and be assured of uninterrupted service at a time when a break-down would mean serious embarrassment and loss.

Deering and McCormick Mowers, Rakes and Tedders and International Side Delivery Rakes and Loaders

are doing satisfactory work on thousands of farms. The combined side-delivery rake and tedder is a winner. International loaders lift hay 10 feet without injury to blossoms and leaves. Sweep rakes, stackers and combined sweep rakes and stackers clean up big fields in a hurry, making **haying** time **paying** time.

And hand in hand with every haying tool goes service. The local agent is always in close touch with one of our 16 branch houses, whose resources and facilities are at your service.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

FARM ENGINEERING

Ploughing With a Tractor

From the Agricultural Gazette

IN tractor ploughing it is very easy to guide the machine when the furrow is rectilinear, but it must be very straight. For this reason the first furrow should be turned most carefully with a team, for the perfection and easy working of all the following furrows depends on its straightness.

Handling becomes much more complicated when the furrow is curved. Let us take the example of a tractor with one driving wheel working in the furrow (Fig. 1).

The coupling *r*, usually attached at about the middle *a* of the back-axle, can turn round this point, describing an arc of radius *r* (length of coupling). When the tractor turns, describing an arc of radius *R*, the chain and, consequently, the plough-beam should take up the position *ac*, in order that the width ploughed should remain constant. On the contrary, however, owing to the pull being accentuated when working on an internal curve, the steering wheel *D* being obliged to run on the ploughed ground.

In any case ploughing curves is always very difficult, and results in a poor yield being obtained from the engine on account of the greater passive resistance, while the machine (even with a differential) wears more owing to the abnormal strain on gears and bearings. Work done on such curves can never be regular nor perfect.

It can be easily understood why circular ploughing is often practised in North America on account of the usually light soils and the fact that a depth greater than 5 to 6 in. is rarely ploughed. The regularity of the work in this case becomes merely a side-issue when compared with the benefit obtained by eliminating turning at the end of the furrows, the ploughing thus being continuous.

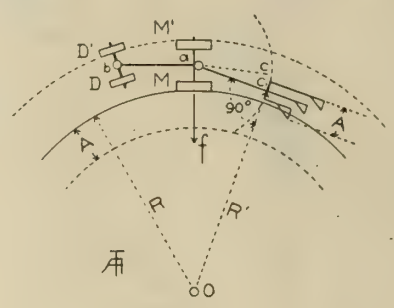


FIG. 1

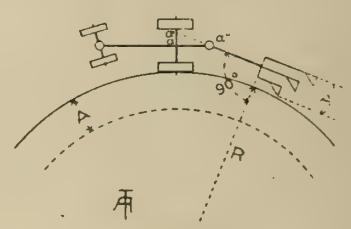


FIG. 2

on a curve the chain tends to assume the position ac^1 normal to R^1), so that there is a tendency for the ploughs to be displaced towards the centre *O* of the curve.

This tendency, whilst hindering the steering by causing a lateral component *f* to act on the driving wheels which causes the rear wheels of the tractor to be displaced transversely to the direction of movement, prevents the ploughing of a uniform width, as the ploughs tend to be displaced towards the ground already ploughed and to enter into the preceding furrows, while the displacement is all the greater as the chain *r* is the longer and the turning radius *R* is shorter.

When the point where the chain (Fig. 2) is attached is moved to a^1 or as far as a^{11}, (as is done for hauling military lorries on the road), the difficulty is lessened, but not eliminated, for such a displacement should vary with the radius of the curve.

This difficulty is also not eliminated when ploughing on an internal curve, *i.e.*, when the driving wheel M^1 runs in the furrow. In this case the ploughs tend to move away from the ploughed land, thus covering a larger width and leaving strips unploughed.

With machines working, not in the furrow, but on the firm land, there is no difficulty in ploughing external curves, because their freedom of movement on the soil allows of the ploughs being guided into the correct position; on the other hand, the disadvantage is

But, in Italy, the more intensive cultivation, which requires better and deeper ploughing, the more compact soils, and the absence of vast plains, indicate the inadvisability of curvilinear ploughing, which should be reserved for indispensable work such as finishing off the corners of the field.

For example, let us assume that a corner of a field, forming an acute angle (Fig. 3), to take a simple case, has to be finished. It should be finished on a curve of the shortest radius compatible with the turning of the machine, *i.e.*, along the curve *acb* (shown as an arc to simplify matters) so as to reduce to a minimum the space *Oacb* which has to be left to be finished by hand. But this is not possible because, whether working on internal or external curves, there would be unploughed strips on the curves, given that the widths L of the first furrows are so much greater than the normal width *l* as the angle of the field is more acute.

The ploughing must, therefore, be done in *concentric* curves (Fig. 4); the part of the angle left untouched will, it is true, be greater, but the rest will be completely and uniformly ploughed.

The attention of the drivers should be drawn to this simple fact, especially when they wish to close the furrows by proceeding from the exterior to the interior of the field (as is done in rice fields where the golden rule is to heap the soil against the banks that surround the field, so as to strengthen them), in order that they may not open the first

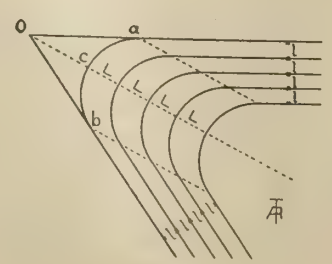


FIG. 3

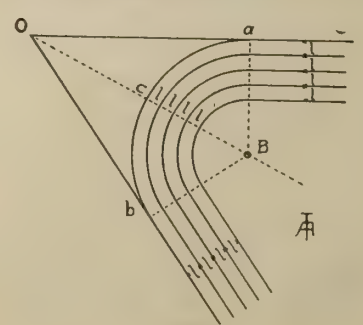
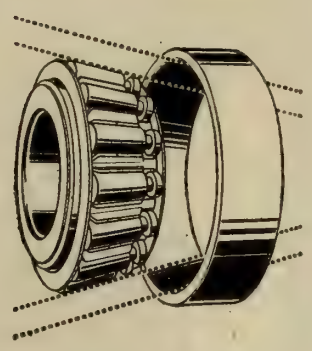


FIG. 4

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Does It Really Cost More?

Does the added safety and durability that the manufacturer puts into his car when he specifies Timken Tapered Bearings actually mean a bigger outlay on his part for the item of bearings?

Does the protection that he thus secures for other important parts add to manufacturing cost?

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Like the best known and best built axles, springs, transmissions, electric starters and so on they add far more ***value*** than they do to ***price***.

The foregoing is borne out by the names of the motor car, truck and tractor builders listed in "The Companies Timken Keeps." These builders would not pay more for Timken quality, if they did not know from experience that they thus add value to their product.

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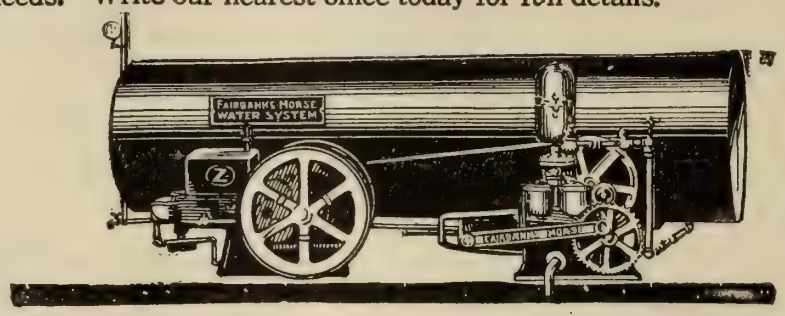
Running water is an indispensable feature of the up-to-date farm. It is a necessity as a matter of efficiency, economy and protection.

A Fairbanks-Morse
Pneumatic Water System

means a greater measure of safety from fire, the same convenience in the country home as in the city, a relief from the labor of carrying water to stock or for use in the garden.

The Fairbanks-Morse Pneumatic Water System is equipped with power or hand pump, either guaranteeing a continuous flow of water to any part of the farm buildings. Take the drudgery out of the farm chores by installing a Pneumatic Water system and have water at a turn of the tap anywhere on the farm.

There is a Fairbanks-Morse Pneumatic Water system of the size adapted to your needs. Write our nearest office today for full details.



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The Canadian Fairbanks-Morse CO., LIMITED

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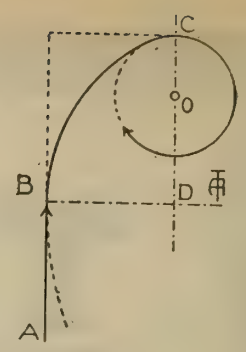

FIG. 5

furrow with the maximum turn, then find that they cannot turn symmetrically on the curves of the subsequent furrows.

Handling With the Ploughs Lifted

Handling with the ploughs lifted is much lighter and easier than during ploughing, but it is much more frequent, particularly when there are short furrows or irregular plots, so that they tire the driver the most. From this point of view, they thus deserve special consideration.

Turning is easier with two steering wheels mounted on a loose axle, turning like the front-wheels of an ordinary four-wheeled cart. It is less easy when the two wheels are turned as in the automobile type, and still less easy when there is only one steering wheel. In the last two cases turning on the spot is very tiring if the types of the wheels are very prominent and it is almost impossible on very compact soils.

The turning should, therefore, be done while moving, and gradually, without pushing the turn to the maximum, for handling is nearly always more tiring on narrow curves; but, on the other hand, it should be done energetically and quickly so as to save time and space.

It is thus of interest to see how the machine can be handled in the field, while meeting the opposite requirements of less fatigue with greater speed, in the narrowest space.

When it is said that a machine *turns* in a radius, of 5 meters for example, it means that the machine can, at the maximum, turn in a circle of 10 metres in diameter, but not that it could do the whole turn in a space of 10 metres except by doing the maximum turn *on the spot*, which never happens in practice.

For example, take a machine moving along a straight line *AB* (Fig. 5) and which, when at *B*, should turn to the right. The driver, letting the machine move forward, commences to turn gradually towards *C*, the maximum turning point, after which the machine would advance automatically, describing an infinite number of circles of centre *O* and radius *OC* corresponding to the minimum possible to the machine.

SATISFACTORY FARM WATER SYSTEM

By Roland W. Gregory

IN your issue of April first, I notice an inquiry from M. V. I. for information regarding a water system. Several years ago I put in a water system to supply both house and barn and find it very satisfactory. A description of this might offer some suggestions.

I have a large well between the house and barn about 200 ft. from each, and the bottom of this well is about 20 ft. lower than the basement of the buildings. About fifteen feet from the well I erected a tower about fifteen feet high and on the top of this tower I placed a fifty-barrel tank. The tower was built on a concrete foundation ten feet square, and the top of the tower was eight feet square. The tower was built of timber and well braced. I enclosed the tower with matched lumber boarded up and down and with clapboard siding and building paper over the matched lumber. The tank on top of the tower I also enclosed with matched lumber, put a roof on it, and packed with shavings between tank and enclosure. I put in six-inch tile in one corner of the tower and alongside of the tank and out through the roof enclosed in concrete for a chimney to enable me to put in a stove in

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Special Offer

Our "Buggy Special," No. 104, is a big seller. It is thoroughly STRONG, HIGH GRADE AND FINE LOOKING. We particularize on this and have put extra value into it. Select leather of good weight. Single strap Breast Collar, raised layers; strong Traces; Breeching has side, back and hip straps; Saddle has patent leather skirts and jockeys, padded, leather linings and flexible tree and 1 in. swinging shaft bearers; Lines 1 in. with russet hand parts; Trimmings heavily nickeled. Solid Nickel, $2. extra. Genuine hard rubber $4, extra. Express prepaid to any station on receipt of price. Guaranteed satisfactory or goods may be returned. Order now.

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$9 for set of 4.

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For motor cars, tractors, stationary and marine engines.

NO more engine missing
more new plugs
more cleaning plugs
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SPECIAL OFFER
This ad and $1.50 entitles you to one only Super Spark.

Eastern Distributor: Vlit Mfg. Co., 223 McGill St., Montreal.
Western Distributor: Shell Supply Co., 509 McGreevy Bldg., Winnipeg.
Exclusive representatives wanted for counties and townships.

which I build a fire in extreme weather to avoid getting the pipes frozen and also to be able to use the place as a workshop in cold weather. I have an entrance door on one side and good-sized windows in the three other sides, which gives me plenty of light. The pump-house is floored with concrete, sloping to the centre and a good drain from there leading outside to carry off water when draining the engine.

I use a tank pump with two-inch suction pipe and also two-inch discharge. The discharge pipe runs up from the pump alongside of the tank and with elbows and short pipe at the top. The water is turned in the top of the tank. The suction pipe I have turned down in the ground about four feet and then fifteen feet into the well and again turned down to the bottom. The service pipe is fitted into the bottom of the tank and is carried down through the floor and under ground to both house and barn.

I operate the pump with a 1½ H.P. gas engine and can fill my tank in less than one hour. I have a valve in the pump house in order to shut off the water from the service pipes in case repairs may be necessary. I have also an arrangement to put in a shower-bath for summer use. I used 1¼-inch pipe from tank to building as I got a bargain in sufficient pipe second hand to complete my system. I find the water service for both house and barn a great convenience and if the above information is of any value to any of your readers I would feel repaid for the time spent in writing the above description.

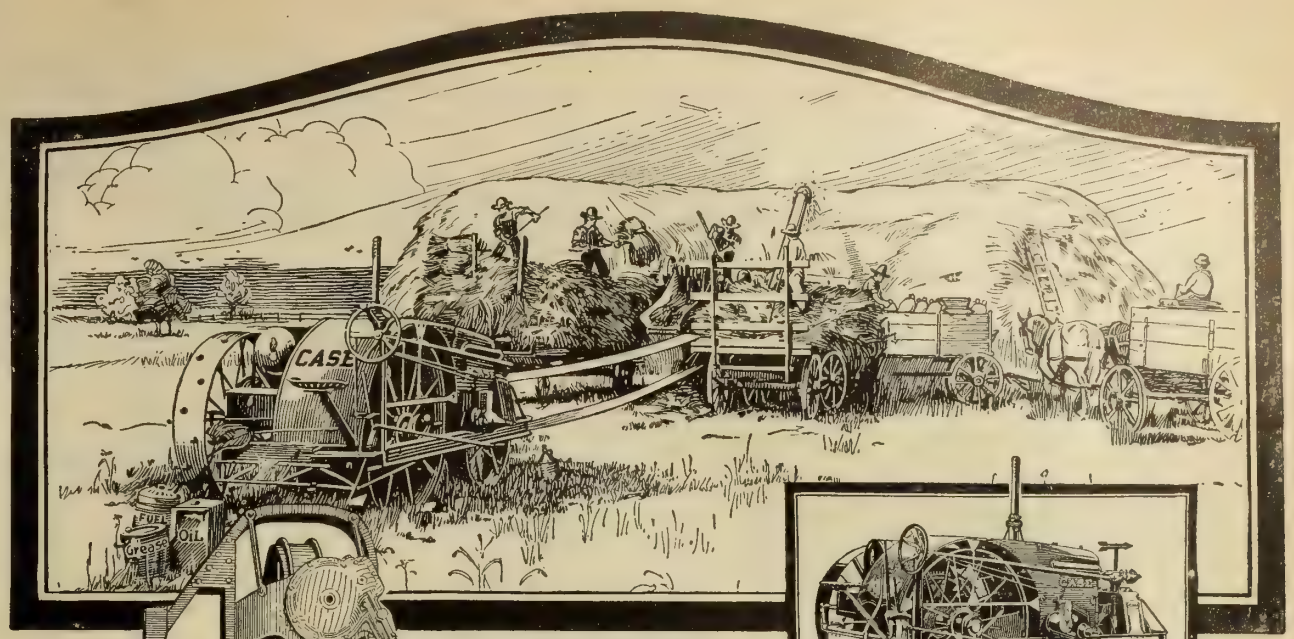
IS IT FAIR?

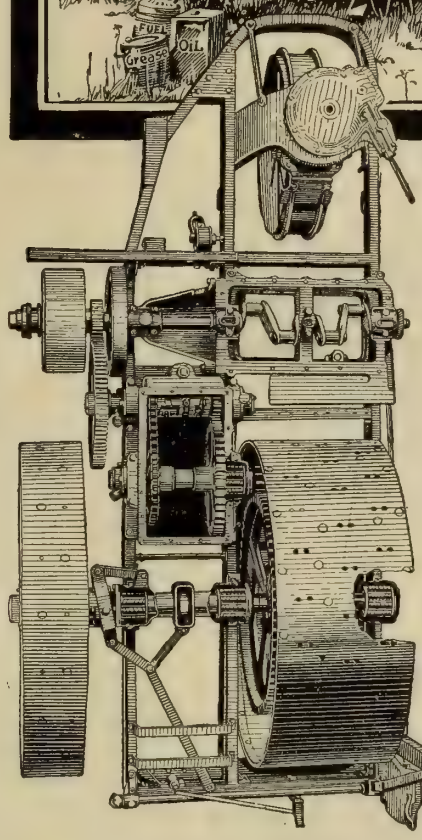
Continued from page 4

of the land speculator and the evils he produces. The capital of Alberta is spread over an area far larger than it ought to occupy. Outside the built-up area a speculator holds a piece of property at an exorbitant figure. A man wishing to start a store or factory goes beyond him in order to avoid extortion. He builds a block or so out from where he would like to do. Another speculator boosts the price of land beyond him and the next producer has to go still farther out. Thus the city is spread over miles upon miles with open gaps between, afterwards consolidated at great cost. When the City Council comes to lay pavement, to build street car lines, provide sewerage, light and water systems and to police the precincts, it has to cover an area far beyond what it should. Cost is multiplied and many residents are long deprived of needed service. Speculation is the cause. Is it fair?

Single tax fails to solve the problem because it deals with a situation created instead of remedying the fundamental cause. As well attempt to destroy a burdock by plucking a leaf now and then instead of digging up the root. Single tax is not radical. It does not go to the root of the trouble. It is not a remedy. It is merely a palliative. It can never avail. The sooner we recognize this and get down to root principles the better.

"Socialism!" exclaims someone in superstitious horror. Certainly. Socialism is co-operation on a national scale. There are many sound principles embraced in orthodox socialism and one of the very best is common ownership of city real estate. There are clear-visioned thinkers who would extend the principle to farm property as well; and probably this will come in time by means of some such system as tax titles. Personally, I have always hesitated at the thought of socializing farm land for fear of alienating the sentimental and business interest of the husbandman from the land he holds, thereby discouraging beautification and rural improvement. If this drawback can be overcome I should hold up both hands for the state ownership of all land. But whatever the objections to common ownership of farm acres, such do not apply to urban real estate. The owner of a city business lot feels no more sentimental interest in the ground his building stands upon than he does in the cement sidewalk in front of his door. There is nothing of value to be lost by





Chassis of Case 10-20

"Better Be Safe Than Sorry"

Steady, Constant Power for Threshing

This Case 10-20 is Recommended for All Kinds of Belt Work

The Case 10-20 is praised as widely for its adaptability to all belt-work, as for its use in plowing and other field jobs. For five years it has proved its superiority on thousands of farms, not only throughout this country, but all over the world. Though rated at 10-20 horsepower, it can develop at least 20 per cent more.

Its powerful engine supplies that smooth, even power needed to keep your thresher running at uniform speed.

This smoothness of operation, for which the Case 10-20 is famous, is accounted for by the governor controlled, 4-cylinder, valve-in-head Case Motor, set crosswise on the main frame. The belt-pulley is located on the crank shaft, making it easy to "line up" to all belt-driven machinery.

Another great feature is the Case Patented Air-Washer which draws air through both screens and water, preventing dust or grit working into the cylinders. This tractor is also equipped with a Sylphon Thermostat which maintains a uniform motor-temperature under varying loads and insures economical and thorough combustion of kerosene.

There is a Case 10-20 ready to deliver to you quickly. By acting now you are assured of a dependable tractor — one that is always ready for field or belt work.

Ask any Case dealer for a full description of the Case 10-20, or write to us direct. A careful study of all its specifications will show you its proven superiorities. It is a sound, practical tractor, worthy of the endorsement of a concern famous for its success in building power farming machinery of the highest grade. Investigate at once

J. I. Case Threshing Machine Company, Inc. *Founded 1842*
1862 Erie Street, Racine, Wis., U. S. A. 909

The Canadian Fairbanks-Morse Co., Limited
Toronto, Ont. Ottawa, Ont. Montreal, Que. St. Johns, N.B.

CASE
KEROSENE TRACTORS

TOWERS
WATERPROOF CLOTHING

"Takes the Wet out of Rain"
The "Twenty-Twenty" Coat
(Trade Mark)

THE coat that keeps out all the water all the time. This coat is specially adapted for farmers and teamsters, made from heavy material, finished with corduroy lined collar. Fastened at an angle with solid brass rust-proof clasps. You cannot get the legs of your pants wet with this coat. On every Fish Brand label appears the simple words "Satisfaction Guaranteed" which mean that we will make good any Fish Brand garment which for any reason fails to do its full duty. Ask your dealer.

TOWER CANADIAN LIMITED
Toronto
Halifax Vancouver
Coast to Coast Service

TOWER'S TRADE FISH BRAND

Shinn-Flat Protects Property

Worry No More About Lightning.
Lightning cannot harm any building equipped with Shinn-Flat Lightning Rods—this we guarantee when we make the installation.

Shinn-Flat

LIGHTNING RODS PROTECT

Shinn-Flat Lightning Rods are installed by men who have been carefully trained under the direction of Prof. W. H. Day—Canada's well known authority on Lightning Prevention.

Professor Day realizing the importance of efficient Lightning Rods scientifically installed is now devoting his entire time to advancing the use of Shinn-Flat conductors. You will profit by these services.

FREE: Our illustrated book Lightning "Cause and Control" by Professor Day describes Shinn-Flat Rods and tells how the reduction in the insurance premiums pays for cost of installation.

SHINN MANUFACTURING CO. OF CANADA, Limited
Factory and General Offices GUELPH - ONT. Dept. B Prof. W. H. Day, Sec. and Manager

Lightning Can't Strike IF Shinn Gets There First

Master Six-The Nation's Choice

Leadership is ever accorded the victor. Popularity is the reward of merit in all walks of life.

The reason for Master Six popularity lies in the fact that these models absolutely satisfy the discriminating motorist. The motor-wise man will tell you to "Buy a McLaughlin."

Send for Catalogue.

The McLaughlin Motor Car Co.
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McLAUGHLIN MASTER SIX H-6-45 SPECIAL

See the McLaughlin models at the nearest McLaughlin Show Rooms

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30 x 3½	Inner Tube.....	$ 2.10
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Obtain a discount from above prices by joining the Co-operative Motor Association. Write us for particulars. You can save money on all Auto Accessories from Spark Plugs to Auto Tops.

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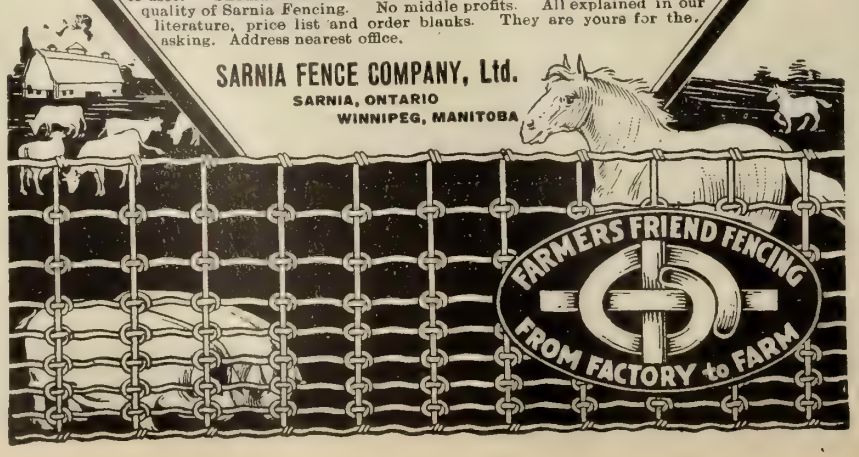
The Co-operative Motor Association
239 Craig St. West, Montreal.

It Pays to Buy the Best

It never pays to buy an inferior article. That is particularly true of fencing. The cost of erecting a good fence is not more; it lasts longer, looks better, gives years of satisfaction. Sarnia Farmers Friend Fencing is made of highest quality, open hearth, full gauge, heavily galvanized steel wire. We positively assert that no better grade of fence wire can be bought than what we use. We have the best powerful loo ns for weaving fencing, modern equipment for handling, experienced men for operating — in fact, everything is done to produce quality at the greatest economy of production. You get bright, new fencing when you buy the Sarnia, fresh from the loom, shipped direct from factory to user. Thousands of satisfied farmer customers testify to the superior quality of Sarnia Fencing. No middle profits. All explained in our literature, price list and order blanks. They are yours for the asking. Address nearest office.

SARNIA FENCE COMPANY, Ltd.
SARNIA, ONTARIO
WINNIPEG, MANITOBA



socializing city real estate. There are advantages to be gained that would stagger the imagination of the most daring statistician. City real estate should be owned in common and leased, not sold. The rentals would go to provide civic conveniences and improve the lot of the common people. The fruits of all increment in value would then go back to the people whose efforts produced the value. The rents would pay the taxes.

So far as I am aware no man has attempted to calculate the burden upon world production assessed indirectly by landlords through the medium of rent. It must be hundreds if not thousands of billions of dollars. And this through private ownership of land. This staggeringly incomprehensible total is disguised as cost of manufacturing, cost of wholesaling, cost of retailing, cost of all services rendered by those who live in the cities.

The people to-day feel instinctively that they are deprived of a square deal. They do not perceive clearly where the jokers are concealed but they know there is something wrong and in a groping, passionate, often futile effort they launch out to remedy their lot. The trades unions strike for shorter hours and higher pay, as though that would avail. They go to the length of declaring for Soviet Government, as though that anarchistic measure would bring justice and relief. Farmers fret over the customs tariff and the abuses sheltered behind it. They are partly right. The tariff is a gross evil, though not to the extent which some extremists picture. Socialists rail at the capitalist and there is no doubt whatever that the capitalistic system tends to economic serfdom of the masses. But Capitalism in industry can be displaced only as men learn to supplant it with co-operation and this is a slow gradual process whose successful progress depends upon the development of practical idealism in human character. The only thing to be said in favor of Capitalism is that it has been adapted to a crude stage in the evolution of human civilization, just as the rule of brute force in Government is best for people too primitive to displace it with something better.

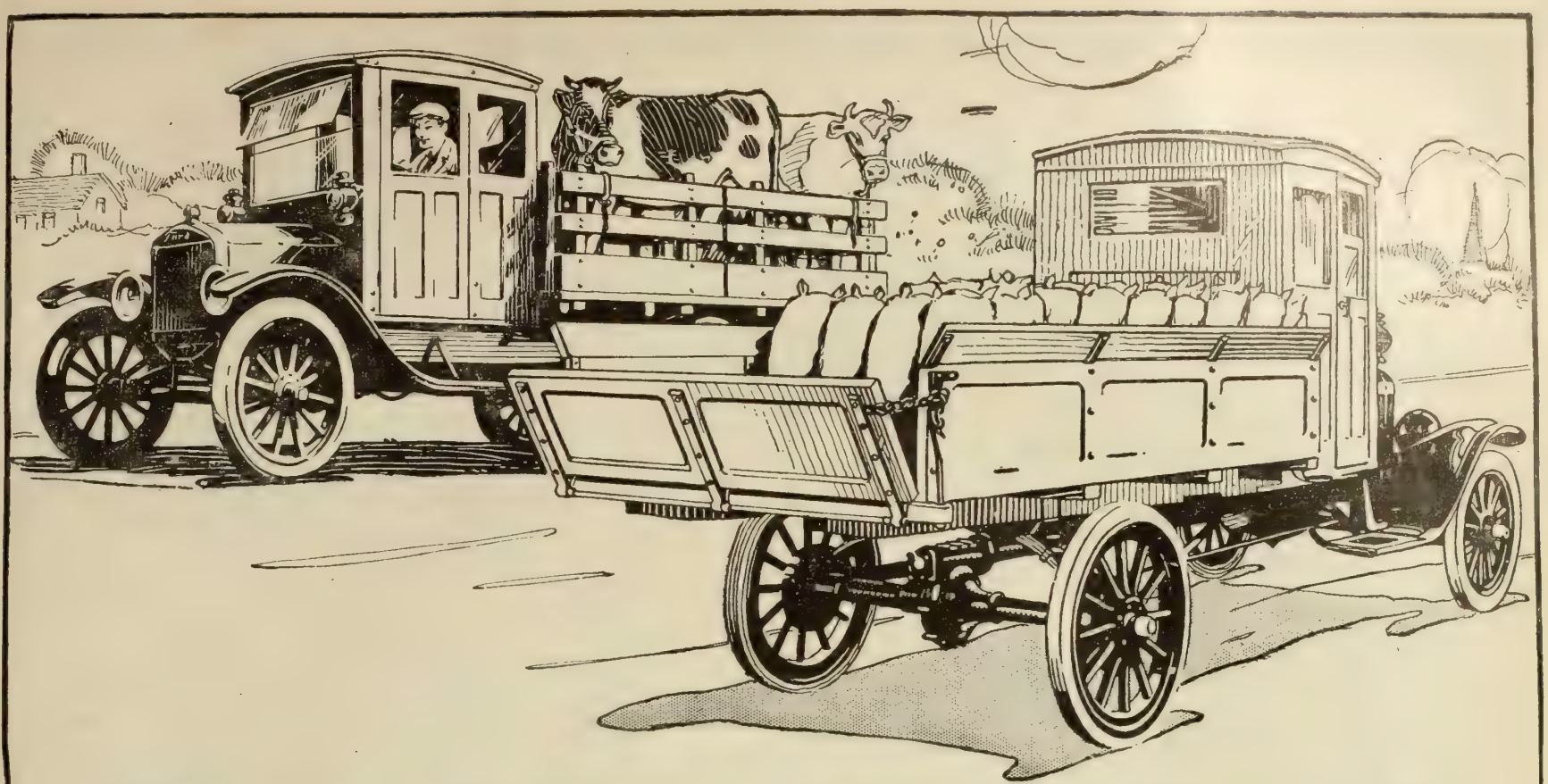
There are many things wrong with this old world and they cannot be all righted at once. Progress upward is a long slow climb of ages. There is no panacea. When you hear a man advancing a single cure-all, put him down as a mono-maniac. He is off his base. But among the many evils existent is one whose stupendous, far-reaching effect has seldom been set forth. It is the private ownership of urban real estate. The vested interests are truly colossal and rapidly growing greater. We cannot focus attention upon the subject too soon.

As a very short, simple step towards dealing with the abuse of unearned increment, the writer recently brought forward an enunciation of a principle in the form of a resolution passed almost unanimously by the Grande Prairie District convention of the United Farmers of Alberta. The resolution reads:

"Whereas effort and service, rather than the accident of circumstances, are the measure of the material benefits that any citizen of a community should be justly privileged to enjoy;

"And whereas all increment in land value arising from the building of a railroad belongs equitably and proportionately to the people of the community, both near and far, whose actual or prospective labor has created, or will create the traffic that justifies the building of the road;

"Therefore be it resolved that in our opinion the Dominion Government should enact legislation to provide for the timely preempting, at a fair market value, of all real estate along present or future Government railroads where there is a probability of town sites being established; said land to be sold under suitable regulations to persons prepared to build upon and improve it, the proceeds from the unearned increment, as represented by the net difference between buying and selling price, to be funded for the benefit of adjoining municipalities, thereby lightening the burden of taxation upon all producers."



Does a Farmer Need a Truck?

AMERICAN farmers use more trucks than either manufacturers or merchants.

This is a positive answer to the question: Can a farmer use a Motor Truck at a profit?

The reason for this strange fact is simply this.

The farmer who lives miles from a railroad is practically shut off from the best markets. Everything he sells brings him less than the market price because he is so far away. Everything he buys costs him more because it must be hauled so far. He loses both going and coming. *Motor Trucks are wiping out those distances.*

The farmer with a Ford Truck practically lives next door to the market.

He has a choice of markets.

He becomes more independent.

He can market his goods when and where he pleases.

He sells his crop to the very best advantage.

Any practical farmer who turns this over carefully in his mind, must see that he has a chance to better his position by the use of a Ford Truck. Hauling is a big part of his work. It is cheaper to haul with a Ford Truck than with a team and wagon. It is quicker. It is easier work for him.

But consider the time and labor the farmer can save with a Ford Truck. With a team the trip to town takes the better part of a day.

A Ford Truck makes the same trip in two or three hours!

When labor is so scarce, what farmer can afford to waste day after day of his valuable time?

Ford Trucks Complete With Body and Enclosed Cab

Ford One-Ton Trucks are now supplied, if desired, with standard truck bodies. Two types are kept in stock, ready for immediate delivery, the Stake Body and the Express Body.

Both standard bodies have the Enclosed Cab which protects the driver in every kind of weather. The windshield is the two-way double-ventilating type; keeps out the storm; keeps the cab cool in summer.

These two standard bodies are the type most widely used and are adaptable to the ordinary hauling problem. They insure the greatest utility and longest service from the Ford Truck. They enable any Ford Dealer to supply you with a *complete* truck without annoying delays.

See the Ford Dealer. See these complete Ford Trucks. Consider the matter from every angle; the cost of feeding horses against the cost of running a Ford Truck; the time you lose on the road; the money you lose by being so far from the best markets. There is only one conclusion you can come to. You will have a Ford Truck.

Ford One-Ton Truck (Chassis only) $750 f. o. b. Ford, Ont.

Freight charge to London, $15.00; Toronto, $17.00; Montreal, $22.00; St. John, $31.00; Winnipeg, $47.00; Regina, $63.00; Saskatoon, $66.00; Calgary, $77.00; Vancouver, $93.00.

For either Stake or Express Body, in lead coat with cab but without doors

$128.50 ..... F. O. B. Ford
$133.00 ..... F. O. B. London
$134.00 ..... F. O. B. Toronto
$135.00 ..... F. O. B. Montreal
$137.00 ..... F. O. B. St. John

Ford One-Ton Truck

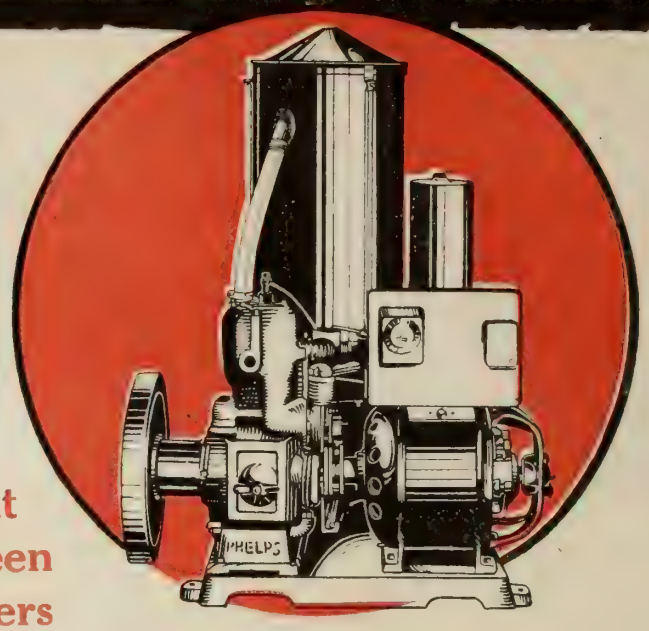
For either Stake or Express Body, in lead coat with cab but without doors

$140.00 ..... F. O. B. Winnipeg
$143.00 ..... F. O. B. Regina
$143.00 ..... F. O. B. Saskatoon
$147.00 ..... F. O. B. Calgary
$151.00 ..... F. O. B. Vancouver

If painted job desired, add $4.00 to above prices. If doors desired on cab, add $6.00 to above prices.

Ford Motor Company of Canada, Limited, Ford, Ontario

Sit down now and write the letter that will change your whole life!



SUPPOSE—as you read this paper—you could flood the room with bright light. At the turn of a switch—just like folks do in the city. Wouldn't that make a wonderful difference in your life? No mussy, dim oil-lamps—that take hours to clean. But a cheerful, happy electric light. In every room in the house. Out in the yard. In the barn, loft or silo. In the drive-shed. In the stable—where you spend an hour each day doing chores in the dark. Everywhere on your place.

Be frank with yourself—wouldn't that be a wonderful convenience? Wouldn't electricity add just the final city comfort that farm life lacks.

Now sit down and write the letter that will change your whole life. Or send the coupon below. Learn what a wonderful thing electricity is. Learn how it can be harnessed to lighten the back-breaking job for you—every day. Learn the true facts about electric light plants. Learn how surprisingly little it costs to have a dependable electric light and power plant serving you day after day. Working like an extra hired man in the busy summer season. Making the home more cheerful in dark winter days. Taking the drudgery out of your wife's work all the year round.

Here's the Story That Has Never Before Been Fully Told To Farmers

Farmers have been waiting for the dawn of the day when electricity would become the servant of the farmer as it has become the servant of the manufacturer.

True, scores of farm lighting plants have been put on the market. Hundreds of modern enterprising farmers have bought them.

But no one has yet told the farmer what an electric plant will actually do for him. No one has offered him a plant that will do all the things he has a right to expect it to do.

Have These Facts About the Phelps in Mind When the Lighting Plant Salesman Calls

It is a powerful, rugged engine---4 horsepower.

It has a 1500 watt generator---TWICE the capacity of the ordinary plant offered to farmers today. Big Water-cooling tank.

No hand adjustments. Even young girls operate it.

Self-controlled. Scientifically lubricated.

And it has a POWER-PULLEY that gives you power direct from the engine. Saves batteries and kerosene.

To-day we can give you both—if you write us or send us the coupon below. We can show you that an efficient electric light and power plant—designed expressly for farm service, not merely a toy to sell to farmers—costs less than a low-priced automobile, does a whole lot more work, saves a lot more time, gives more genuine lasting pleasure to the farmer.

Pays for Itself

And we can offer you in the PHELPS Electric Light and Power Plant a real lifetime investment. An electric plant that will add hundreds of dollars to the value of your farm.

We picked the Phelps from all the plants on the market—both in Canada and the United States. We know electric plants. Our consulting engineer knows them. And we both agreed that the Phelps was THE job for the farmer.

Let's tell you why. Let us tell you the inside facts about electric plants. We believe that electric power is the biggest help science has devised for the Canadian farmer since the self-binder was invented. Thousands of electric plants are going to be sold in the next few years. You'll probably be buying one. You **will** be buying one.

Get to **know** electric plants now. Get to know them so that you can understand **values.** Get to know them so that you can talk with your neighbors about them.

We've got the story ready now. In a big striking illustrated folder. We've a staff of specialists ready to answer your questions. This folder is sent FREE to progressive farmers who are interested in making more money and making life pleasanter.

Simply mail the coupon, or write us a letter or postcard.

Gentlemen:—

Please send me your big illustrated folder about electric light and power plants. I want to read it at my leisure. (7)

Name .....

Address .....

(Give nearest town)

Manifold Light and Power, Limited
Distributors for Western Canada
240 Main Street, Winnipeg

GRACE MOTORS
LIMITED

Canadian Distributors
255 Queen Street East
TORONTO

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Members of The Audit Bureau of Circulations

FARMERS' MAGAZINE

Canada's National Farm Magazine

Published Semi-Monthly by The MacLean Publishing Company, Limited, Toronto.

MONTREAL, Southam Bldg. WINNIPEG, 1207 Union Trust Bldg. VANCOUVER, 39 10th Ave. West. LONDON, ENG., 88 Fleet St., E. C. 4. NEW YORK, 111 Broadway. BOSTON, 734 Old South Bldg. CHICAGO, 311 People's Gas Bldg

VOL. XII, No. 11 JUNE 1, 1919 $1.50 Per Year 10 Cents Per Copy

Interchangeable Capacity

"It's like getting a new Separator for a trifle"

Don't Worry About Increased Capacity—Get a RENFREW

Every progressive farmer is bound to increase his herd sooner or later. If you do not want to buy an entirely new separator every time you have to increase your separating capacity, will it not pay you handsomely to own a

Renfrew

With its exclusive interchangeable capacity feature you can feel free to add to your dairy herd without the worry and expense of providing a new separator.

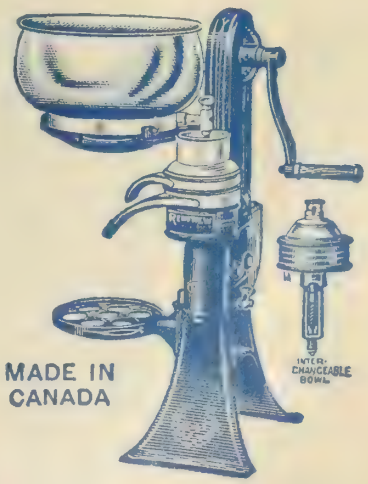
When you want to increase capacity all you have to do is to order a bowl of the size you need—450,650,800 or 1000 lb.—with attachments; we make an allowance for return to us of your smaller equipment. The cost of making this change is very moderate.

All Renfrew machines have the same size of frame. It is heavy enough for the largest capacity. Thus you could change your machine from 450 lb. capacity to 1000 lbs. if desired, without increasing the strain on the machine.

Renfrew interchangeable capacity does not mean trying to make one size of bowl skim different capacities. If you order the proper size of bowl you have a full capacity machine that does the work just as thoroughly as if you had secured an entirely new separator. Isn't it worth any man's while to investigate this big saver of time, worry and money?

The Renfrew's close skimming record is unsurpassed, and it is proven by Government Dairy Schools tests. In addition you get firmer, better butter, owing to the Renfrew's exclusive wide open bowl with curved wings.

Write for booklet fully describing the Renfrew's interchangeable capacity and self-oiling features, its low supply can, easy-turning and easy-running advantages.



The Renfrew Machinery Co., Limited, Head Office and Works **Renfrew, Ont.**

Agencies almost everywhere in Canada. **Eastern Branch, Sussex, N. B.**

Other Lines: Happy Farmer Tractor—Renfrew Kerosene Engine—Renfrew 2000 lb. Truck Scale.

Illustration by C. W. Jefferys for "Victory Stuff," by Robert W. Service

"Victory Stuff"

By Robert W. Service

THE famous Canadian poet is engaged on another volume of war verse and, as usual, the best of it will appear exclusively in MACLEAN'S. The first poem of the new series "Victory Stuff" appears in the June number, now on sale.

The war poems of Service have appealed to the great heart of the people perhaps more than anything else that has been written.

His success is not due entirely to his powerful treatment and the marching rhythm of his lines, but can be attributed as well to the fact that for four years he drove an ambulance, carrying the broken remnants of men from the zone of the roaring guns; and thus lived and communed and suffered with the men who knew what war was.

The spirit of the trenches is in all of Service's gripping ballads. His first war book, "Rhymes of a Red Cross Man," broke all book selling records in Canada.

When Julia Arthur, the Canadian actress (who appears on the cover of June MACLEAN'S) made a tour of the training camps in the United States she found that nothing really stirred the doughboys but readings of Service. They would literally lift the roof after the reading of his "Blood-red Fouragerre," which appeared first in MACLEAN'S MAGAZINE.

"Victory Stuff" and all of the new series are as good as the best he has done in the past.

The Other National Features

"Solving the Problem of the Arctic." By Vilhjalmur Stefansson. The third instalment of his official story of his five years' explorations for the Canadian Government, appearing exclusively in MACLEAN'S.

"The Menace in the South." By Agnes C. Laut. A sensational article on the growth of Bolshevism.

"The Undercurrents." By J. K. Munro. A sharp, pithy and impartial review of events at Ottawa.

Many other articles—four stories by W. A. Fraser, C. W. Stephens, John A. Steuart and Edith G. Bayne—a magnificent Review of Reviews Department.

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Over 65,000 Canadian Families Buy

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"CANADA'S NATIONAL MAGAZINE"

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143 University Ave.,
Toronto, Ontario.

I accept your offer. I am enclosing $1.00 to pay for MACLEAN'S MAGAZINE for six full months. Please start me off with the big April issue.

Name

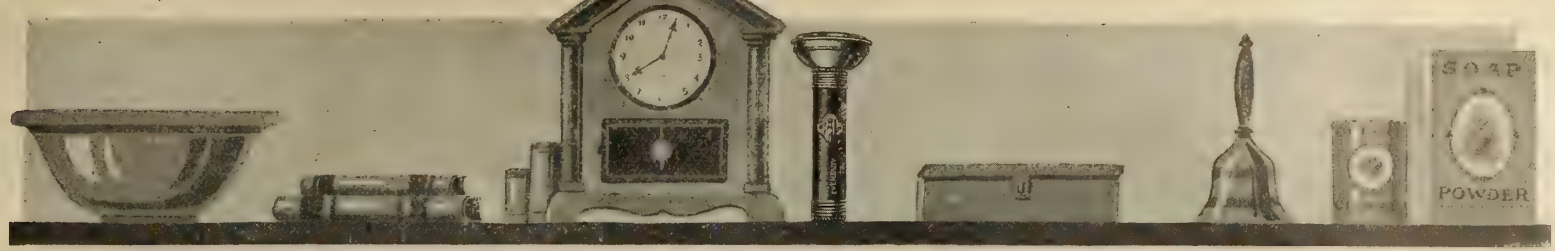
Address

A TRIAL—6 MONTHS FOR $1.00

MACLEAN'S sells for $2 a year should be more. We want you to get acquainted with MACLEAN'S, for we know that after we once introduce you to "Canada's National Magazine" you two are going to be friends for life. So, to make you known to each other, we will accept your subscription now for only six months to start off with. In other words, we want you to "try out" MACLEAN'S and see for yourself just how good it is! Don't miss this unusual opportunity. Simply sign the coupon, pin a postal note to it, and mail it to us

TO-DAY!

Always have a ↓ Daylo on the clock shelf



For the dozen uses that bob up every day

"That bread's most done"

"Take the Daylo and bring up a jar of raspberries"

"Go up to the garret and look---don't take matches ---use the Daylo"

"It's among that pile of papers in the cubbyhole"

"Look way back in the ice box"

Important

Styles 4706, 2639, 6962 and 2659 are especially suited for household use. No. 2631 is an ideal style to keep under your pillow. Select yours.

For your protection the registered name, Eveready Daylo, is stamped on the end cap. Accept no substitutes.

EVERY night at some hour or other there is the unexpected or unusual call for Daylo, to "look and see." Have a regular place to keep one, the Clock Shelf, your Dressing Table, or under the Pillow. Don't forget to carry a pocket size in your Handbag when you go out at night.

Canadian National Carbon Co., Limited
Toronto, Ontario

The light that says: "There it is!"

EVEREADY DAYLO

With that long-lived Tungsten Battery

606

FARMERS

MAKE your banker your financial adviser. Let him help you to shape your affairs so that he will be warranted in giving you ample credit to operate your farm efficiently. Our aim is to assist you in every way possible.

THE CANADIAN BANK OF COMMERCE

2A

1869 1919

THE ROYAL BANK OF CANADA

Capital Paid-up $14,800,000

Reserve Funds $15,900,000

Total Assets, $420,000,000

This Bank, with its large resources, and its chain of 500 branches from Newfoundland to the Pacific Coast, offers a COMPLETE BANKING SERVICE to the Canadian Farmer, Rancher, Dairyman, etc.

FARMERS' ACCOUNTS SOLICITED

"An Anchor to Windward"

"Is there any better argument than the circumstances of the present day for the necessity to business men of "an anchor to windward" in the shape of Life Insurance Policies, which are always worth one hundred cents on the dollar, no matter when and under what stress of circumstances they become due?"

Do not forego this safe assurance for want of a little enquiry.

It will be strange if there is not a Policy to precisely meet YOUR need amongst the many valuable Plans of

THE GREAT-WEST LIFE ASSURANCE COMPANY

Dept. "W" Head Office, Winnipeg

Build your home with

MILTON BRICK

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Investments & Insurance For the Farmer

Investment Markets Healthy

By J. W. TYSON, Editor "Financial Post"

A HEALTHY tone appears to be pervading the Canadian stock markets at the present time. There is a steady investment demand, which gives a stable basis to most movements. The unquestioned financial strength of most industrials, with their favorable business prospects, means permanency of dividends, and as assured dividend payers very few of the genuine investment stocks are selling above what may be regarded as a legitimate level, when interest return is considered. These facts all contribute to the stability of the market situation.

There is a certain amount of speculative buying. The abundance of money is encouraging speculation, but so far it has been fairly restrained in character. The experience of the war years has tended to investment rather than speculation, and it is naturally hard to break the public of the habit. Such buying of this character as is going on gravitates towards the New York markets, or the mining exchanges, where, perhaps, a wider scope is afforded the speculator.

Mining stocks have been in great request, with daily totals running well up in the hundreds of thousands of shares. The movement has been largely the result of the sharp rise in the price of bar silver. The whole list has been favorably affected and gold stocks have registered and held substantial gains.

The bond market situation is steady and firm. There is fair investment buying, though dealers are experiencing difficulty in securing issues. Recent sales have been put through at high figures, showing the eagerness with which issues are being sought. The high rate on New York funds is, of course, a contributing factor, since it enables dealers to bid a high price in Canada, while selling effectively in the American market at a much lower figure. In this respect certain recent deals partake of the nature of a speculation in funds.

In the business arena the unsettling factor is the labor situation, which appears to be reaching a somewhat acute stage. The stock markets do not appear to be discounting trouble, and their forward movement in face of strike developments may be taken as an indication that difficulties will eventually be adjusted without much dislocation of industry. Otherwise, the general outlook is favorable.

UNITED STATES OUTLOOK

In the United States the Victory Loan has been a huge success and it is significant that the brunt of the burden of supporting the Loan was not borne by the banks, as had been expected.

During the next few weeks, American bankers anticipate that there will be heavy corporate borrowing by industries that have delayed making loans until the termination of the Victory Loan drive. Bankers in the United States also report that there is evidence of broader commercial borrowing. During the past few weeks substantial loans have been made by the larger banking institutions, indicating that the wheels of industry will soon be revolving on a normal basis. Business concerns generally have been awaiting easier money rates, and a lower level for commodity prices before engaging actively in manufacturing, etc. It is now felt that commodity prices have about fallen as low as can be expected for some time, and with the prospect of easier money, a decided improvement is looked for in the business world.

PUBLIC OWNERSHIP

ONE of the plausible arguments in favor of public ownership as compared with private ownership has been that with competition eliminated there would be no duplication of service in any direction and that a saving would thereby result. So far, despite all the juggling of rates and taxes which, in addition to confiscatory legislation, has operated against the private companies, Sir Adam Beck's Hydro scheme has not been able to render service more cheaply than its competitors. And now there seems likely to be strenuous public ownership competition—competition which can be carried to extravagant extremes if there is no efficient private corporation to establish a standard of service and cost.

From an economic standpoint there are already enough—if not too many—railways in the Western Ontario peninsula. This is the opinion of competent transportation experts. Mr. Hanna, for the National Railways, seeks an American connection and further feeders. The Dominion Government, with the prospect of taking over the Grand Trunk, proposes the development of power on the St. Lawrence for the electrification of various railways. Sir Adam Beck, however, objects seriously to any branch of public ownership but his own and, with the backing of the municipalities, wants to build new radial lines, take over the national system in the Province and monopolize the development of power on the St. Lawrence.

At this time it would be well to consider carefully the public ownership experience of the United States. It can only be described as a colossal failure. Director-General Hines has recently stated his intention of getting the railroads back to their owners. The cables have already been handed back and the telephones will be shortly. New Jersey, which has been a leader in public ownership, is now out with a plea against it. The United States Post Office Department took over the telephone. The cost of operation began at once to go up, and before long the Postmaster-General had to increase the rates twenty per cent. The telephone companies say that the increase would not have been necessary under their control. Now New Jersey wants the courts to intervene to protect them from higher rates.

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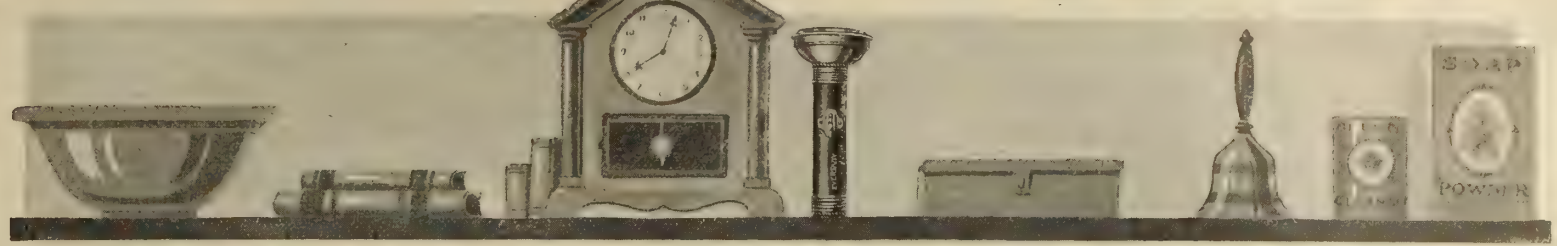

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Great movements of population occur after every war. Many people came to Canada from the British Isles after the Napoleonic wars. The same thing will occur again on a far larger scale if fair promise of future prospects is assured.

There are naturally most splendid prospects in this country. Unfortunately by trade restrictions, high cost of living and exorbitant labor charges in some lines these naturally alluring prospects are for the present time obscured.

There is no particular class of people solely and only to blame except that class which forms too large a proportion of our population who are determined to "get something for nothing." Just how large a proportion of our population that includes is revealed by the number of those who are loaded up with real property from timber limits to city lots in every Province from the Atlantic to the Pacific.

Because something did not always come from nothing there is in some quarters considerable discontent to-day. So many people are loaded down with real estate that few welcome a falling market. And the market of city property in Canada is unduly high compared with old world conditions. Why should it not be with our trade restrictions and our high-paid labor? But there are other people desiring to come to Canada besides those well equipped with muscle. And to these the price of homes and living has an alluring or a repellent appearance.

If we cannot compete nationally there must be some reason. The reason is not far to seek. The speculator, the parasite has preceded the producer and skimmed off the cream. With labor representatives now demanding international arrangements, with Japan asking for an open door economically, our problem must be treated internationally.

We have developed in this country a most expensive system of distribution. There may be some excuse for this. But many of the results are beyond all reason. For instance a leading Toronto paper when acquainted with the fact that the cost of living in Toronto was higher than in London, England, expressed surprise. It is too bad that this editor was not included in the party that spent part of the summer overseas. For there are none of those who have spent the past few years overseas who are not aware of the reason why this unfavorable comparison in conditions between Canada and the Motherland to-day obtains.

Among other reasons are the influence of the speculator who has unduly advanced land values, the trade restrictions which allow industry to be to a certain extent monopolized and the exorbitant demands of labor which in many lines has during the last few years been overpaid.

These points all combine in making a dollar look like thirty cents. When a returned soldier drawing $1.10 per day purchases a cup of coffee and a piece of pie in a Greek restaurant in Toronto the charge is 40 cents. Things happen and people wonder why?

When we realize that food and shelter are much less costly in Britain than here, is it not too much to expect a great influx of desirable people from that land? Certainly those who are able to take advantage of greater chance of employment and a higher wage will find tempting enough conditions. Unfortunately those ranks have been somewhat seriously depleted. In the place of which we have many who are somewhat poorly equipped to fight life's battle. They seek a home where a small income will not be entirely impotent. To these men this country cannot prove attractive until we re-arrange our ideas on the question of comparative values.

SOME people maintain that the presence of people is the chief factor in determining land values. It should be and the fact that land is held at a higher price in some small though scattered cities in Canada than it is in a popular and populous suburb of London, England, is food for thought.

That this condition prevails shows clearly that we have considerable handicaps, left with us by the speculator, yet to overcome before we can offer satisfactory conditions to the prospective immigrant and compete nationally with the world.

Our expensive system of distribution is bound to prevail until Canada becomes a more popular place in which to live. The spreading out too thin in both urban and rural districts accentuates the evil. The high cost of labor necessitated in part to offset the soaring cost of living helps also. Each helps the other and in the meantime private enterprise is checked. Saw mills are not working because of the high wages expected. Building operations are being postponed from year to year. Families are doubling up until three generations are a common find in one house. Municipal, provincial and federal Governments are being besought to solve the problem of providing homes. Labor men are pointing to the danger of unemployment. And these are the conditions when the word *reconstruction* is being overworked.

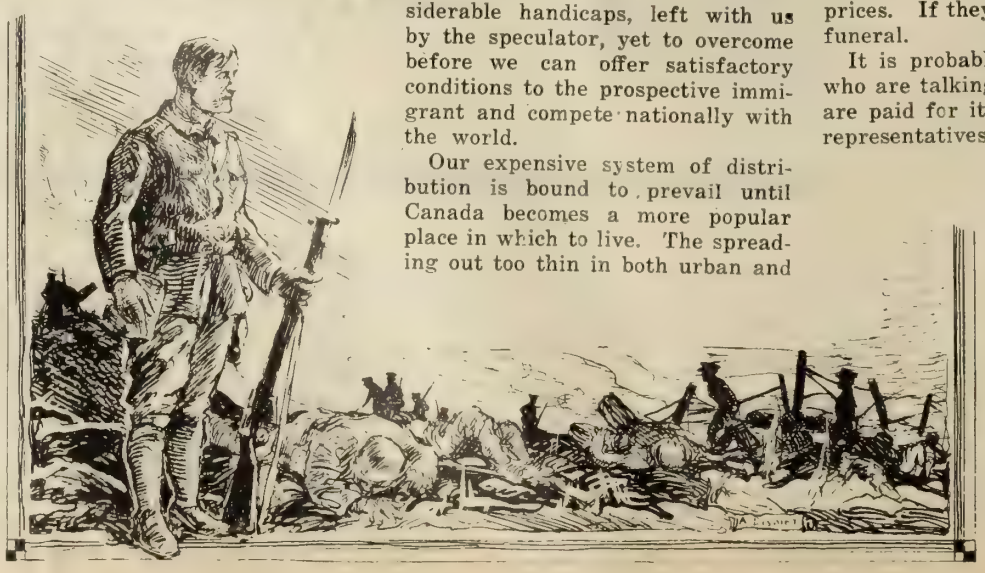
A great campaign is being proposed to steady prices. Reconstruction loans are being proposed to maintain the inflation of our currency for some time. No reasonable objection can be taken to the launching of an extensive plan of construction of public works so long held up. But the attempt to maintain the present high prices and high wages is only staving off the evil day.

A slight reduction in labor will enable private enterprise to again resume operations. Saw mills will again become active, houses will spring up and unemployment be less common. With cheaper labor the cost of living will be greatly reduced and no small amount of the loss from the reduced pay of the laborer will be made up to him through the decrease in his expenditure.

There is to-day much yelling when no one is liable to be hurt. The business men, laborers and farmers in Canada are more prosperous than ever before. During the war they naturally did well. Now they should show themselves good losers if necessary in the readjustment which is to be expected after such abnormal prices. If they did not prepare for this it is their own funeral.

It is probable that the most of them have. Those who are talking the most complainingly are those who are paid for it. It seems so amusing that labor misrepresentatives can denounce so strongly those who do not work, with their hands, while they are employed by the only class of people who pay agitators to carry on their propaganda. While prating of democracy they seek to employ methods as autocratic as the Prussianism which millions died to efface.

Generally speaking these labor agitators are aliens, pro-German in sympathy, Bolshevik in tendency and unworthy a home in a country like this. Their chief production is discontent and they are among the parasites with which we can well dispense. *Continued on page 28*



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We have developed in this country a most expensive system of distribution. There may be some excuse for this. But many of the results are beyond all reason. For instance a leading Toronto paper when acquainted with the fact that the cost of living in Toronto was higher than in London, England, expressed surprise. It is too bad that this editor was not included in the party that spent part of the summer overseas. For there are none of those who have spent the past few years overseas who are not aware of the reason why this unfavorable comparison in conditions between Canada and the Motherland to-day obtains.

Among other reasons are the influence of the speculator who has unduly advanced land values, the trade restrictions which allow industry to be to a certain extent monopolized and the exorbitant demands of labor which in many lines has during the last few years been overpaid.

These points all combine in making a dollar look like thirty cents. When a returned soldier drawing $1.10 per day purchases a cup of coffee and a piece of pie in a Greek restaurant in Toronto the charge is 40 cents. Things happen and people wonder why?

When we realize that food and shelter are much less costly in Britain than here, is it not too much to expect a great influx of desirable people from that land? Certainly those who are able to take advantage of greater chance of employment and a higher wage will find tempting enough conditions. Unfortunately those ranks have been somewhat seriously depleted. In the place of which we have many who are somewhat poorly equipped to fight life's battle. They seek a home where a small income will not be entirely impotent. To these men this country cannot prove attractive until we re-arrange our ideas on the question of comparative values.

SOME people maintain that the presence of people is the chief factor in determining land values. It should be and the fact that land is held at a higher price in some small though scattered cities in Canada than it is in a popular and populous suburb of London, England, is food for thought.

That this condition prevails shows clearly that we have considerable handicaps, left with us by the speculator, yet to overcome before we can offer satisfactory conditions to the prospective immigrant and compete nationally with the world.

Our expensive system of distribution is bound to prevail until Canada becomes a more popular place in which to live. The spreading out too thin in both urban and rural districts accentuates the evil. The high cost o labor necessitated in part to offset the soaring co of living helps also. Each helps the other and in th meantime private enterprise is checked. Saw mil are not working because of the high wages expecte Building operations are being postponed from year t year. Families are doubling up until three gene ations are a common find in one house. Municipa provincial and federal Governments are being besoug to solve the problem of providing homes. Labo men are pointing to the danger of unemployment. An these are the conditions when the word *reconstructio* is being overworked.

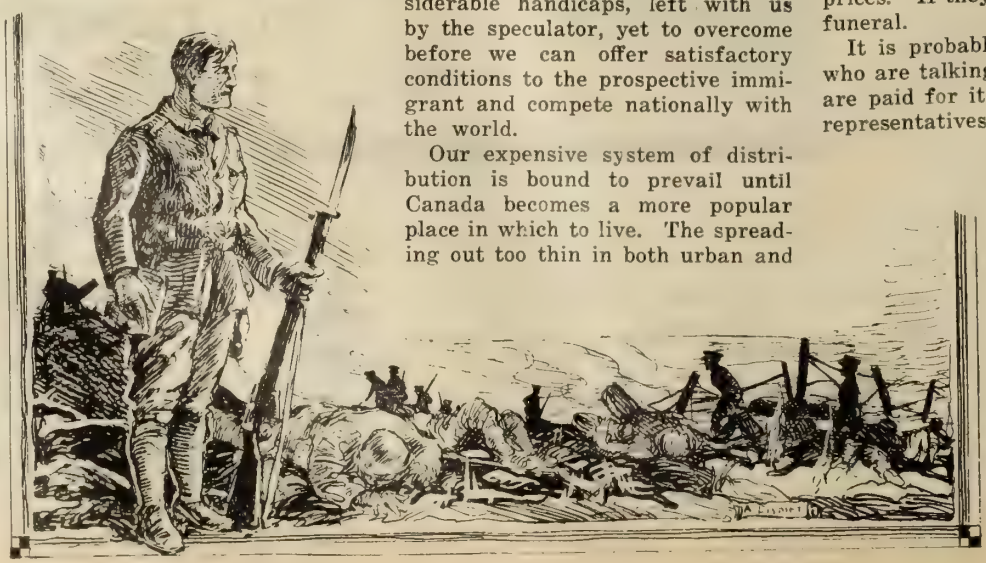
A great campaign is being proposed to stead prices. Reconstruction loans are being proposed maintain the inflation of our currency for some tim No reasonable objection can be taken to the launchin of an extensive plan of construction of public wor so long held up. But the attempt to maintain the pre ent high prices and high wages is only staving off th evil day.

A slight reduction in labor will enable private e terprise to again resume operations. Saw mills w again become active, houses will spring up and uner ployment be less common. With cheaper labor th cost of living will be greatly reduced and no sma amount of the loss from the reduced pay of the labor will be made up to him through the decrease in his e penditure.

There is to-day much yelling when no one is liab to be hurt. The business men, laborers and farme in Canada are more prosperous than ever before. Du ing the war they naturally did well. Now they shou show themselves good losers if necessary in the rea justment which is to be expected after such abnorm prices. If they did not prepare for this it is their ow funeral.

It is probable that the most of them have. Tho who are talking the most complainingly are those w are paid for it. It seems so amusing that labor m representatives can denounce so strongly those who not work, with their hands, wh they are employed by the only cla of people who pay agitators carry on their propaganda. Wh prating of democracy they seek employ methods as autocratic as t Prussianism which millions died efface.

Generally speaking these lab agitators are aliens, pro-German sympathy, Bolshevik in tenden and unworthy a home in a count like this. Their chief production discontent and they are among t parasites with which we can w dispense. *Continued on page 2*



York-Berk-Duroc Feeding Costs

By GEORGE KAY MILLER

The large white English type of brood sow. She would make a very good type of Yorkshire if her jowl were less heavy.

One of the strangest things about people is their lack of conclusive information on ever so simple a subject as the feeding of pigs. Lessons that have been personally learned in the school of experience stick longer than experimental reports, but even in the former case one constantly finds farmers who will act in their feeding and breeding operations as if they had never known the results formerly obtained. And even our public educators are guilty of the same thing, as we find fresh experiments being proposed to show the value of a pure bred sire on a nondescript foundation mating. Perhaps the lack of co-ordination in our federal and provincial agricultural departments is to blame for much of the repetition and overlapping. This test reported here seems to be one well worthy of note. Its conclusions are interesting.—EDITOR.

A Canadian bacon type of the Tamworth persuasion. This is a fairly good specimen.

IN his work as superintendent of the Lacombe experimental station, G. H. Hutton was thoroughly original and practical. He had a constant eye to the problems of the practical farmer in Central Alberta, and directed every effort toward his assistance. Serving, as the Lacombe station did, a district admirably suited to livestock raising, it was along the lines of animal and dairy husbandry that his most important and far-reaching tests were planned. The results of Mr. Hutton's work at Lacombe will long remain valuable in the minds of all good farmers in Central Alberta.

One of the most interesting experiments was a three-year test in comparative feeding of three breeds of hogs, to determine if possible the relative economy of production of pork. Berkshires, Yorkshires and Duroc Jerseys, were used in the test. While a relatively small number of hogs were used in the initial test in 1916, when only sixty animals were included, the number was increased in following years, not less than 150 of each breed being used in 1917 and 1918.

In the second year of the operation of this test, brood sows were purchased from a large number of different breeders, and their progeny were used in the experiments. Since these foundation animals included the blood of practically all the strains of the different breeds which are common throughout Western Canada, the objection cannot be raised that this was a test of different strains of hogs and that strain would doubtless determine the result. The test was as cosmopolitan in regard to strain as it could be made, and representatives of all of the litters of purebred pigs farrowed about the same time were included.

In 1916 the test was conducted during the winter, while in 1917 and 1918 it was begun as soon as spring litters were weaned, and was carried on until the hogs were ready for market. In every case the hogs were fed at a self-feeder, all getting exactly the same kind and mixture of grains with a five per cent. addition of digester tankage. They were given the same kind of pasture during the seasons of 1917 and 1918, and an effort was made in 1917 to have the watering system comparable, though in that year the Durocs may have had a slight advantage, as they alone had free access to water at will. In 1918 every breed had access to water at all times, and were under identically similar conditions as to shelter, system of feeding and apparently in all other respects.

For two years the Yorkshires led in economy of production, while in 1918 the Berkshires stood first. In 1917 the Berkshires and Durocs were practically equal as to grain required for a pound of pork. A variety of feeds were used. In 1916, ground oats, barley and tankage; in 1917 the feed was principally shorts and tankage, while in 1918 grade A screenings, well ground, together with tankage, constituted the ration fed. In 1916, as has been stated, the work was done during the winter when no pasture or succulent feed was available. In 1917 the pasture was timothy with very little alsike clover, and in 1918 rape pasture was provided.

In size of litters the breeds stand as follows:

	Av. No. of Pigs in Litter.	Av. No. Alive at Weaning.	Per Cent. Raised.
Yorkshires	10.8	7.0	64.4
Berkshires	9.1	6.4	70.0
Duroc Jerseys	8.4	7.4	88.1

Taking the three-year average, the number of pounds of grain per pound of gain required for the different breeds is as follows: Yorkshires, 4.09; Berkshires, 4.69; Duroc Jerseys, 4.71.

In the top picture we see illustrated the type of self-feeders and colony houses for each breed during the experiment conducted at Lacombe. Next the Yorkshire group in pasture, 1918. Third the Duroc-Jersey hogs used in the 1918 test, and the bottom one shows the Berkshire hogs.

The dressing percentages of the breeds for the experiments of 1917 and 1918 stand as follows:

Yorkshires	74.63 per cent.
Duroc Jerseys	74.47 per cent.
Berkshires	72.05 per cent.

This experiment, while conducted on a very large scale, is not yet conclusive. These figures are the first yet published regarding this test and should be of interest to breeders everywhere. The experiment is serving to emphasize the importance of a good sire, because *the uniformity of the litters of the different breeds from year to year is quite an indication at the very beginning as to the result of the test at the finish. It is impossible to pay too much attention to the sire in a hog feeding enterprise.*

POPULAR B.C. GOATS

By J. T. Bartlett

THE membership of the British Columbia Goat Breeders' Association increased 40 per cent. in 1918 to a total of 247. The number of goats of all kinds in the province is now approximately 3,000. These figures were made known at the annual association meeting held at Burnaby, a Vancouver suburb. The association expended $800 in 1918, $300 of which was for feed, care and transportation of goats at the Vancouver Exhibition. During the year, it was stated, 13 head of pure-bred bucks and does were imported into the province. The association decided to petition the Dominion Government for the appointment of a goat inspector.

The meeting elected a directorate which will meet and choose officers for the coming year. On this board G. H. S. Cole, Port Alberni and W. J. Moore, Victoria, represent Vancouver Island; R. Heddle, Nelson, and N. F. Tunbridge, Penticton, the Interior; and J. E. Cottrell, Central Park, Dr. Ranson, D. Mowatt, Burnaby the Lower Mainland. Major D. Mowatt was president of the association in 1918.

Goats in this province are most numerous around Vancouver, where they are popular with small-holders. There are well-bred, successful flocks at wide-flung points. N. F. Tunbridge is interested in goats on a business scale at Penticton, Southern Okanagan Valley.

California is the only other district on the American continent where goat interest is so keen and well-organized as in B.C. Last fall B.C. owners of pure-bred bucks co-operated in a joint advertisement published in various provincial newspapers. The association's aim is to keep goat-breeding in this province on a substantial, successful basis, with due attention to the paramount importance of pure-bred stock.

"The farmers believe in a fair measure of protection, but what they object to—their letters, their addresses, their talk prove it—are the 'combines' that exist, because of the tariff, to extort undue profits and eliminate all competition."—Col. John Maclean at the Canadian Manufacturers' Association meeting.

Standardizing Our Farm Products

Big Sales Lie Ahead for Quality Stuff

By C. F. MACKENZIE

The writer of this article is the new livestock editor of FARMERS' MAGAZINE. *Readers will find him in close sympathy with all their work. A recent graduate of the O. A. C., farmer-born, and high man of the Chicago judging team, all qualify him for one's confidences.* —EDITOR.

CANADA has now a splendid opportunity of placing the livestock industry on a broader, more permanent basis. Furthermore, the situation engendered by the suspension of hostilities has not lessened the demand for the exportation of meats, animal products, live breeding stock, and farm produce of all kinds. Indeed, it has rather called for an increased production on the part of the farmers, even to the limit of their ability.

Abnormal conditions in Europe have led to a great many changes. Trade channels are shifted, sources of supplies cut off and several competitors are out of the running entirely. Europe's extremity is Canada's opportunity. The situation is one that demands immediate action on the part of the leaders in agriculture. The question of prices need be no obstacle, because with such a great shortage of livestock in these meat consuming countries of Europe, the demand for meats and farm produce of all kinds will continue for many years at high prices.

Again, it is quite logical to expect that during the period of re-organization and re-adjustment, livestock men will look to Canada for stock of all classes, to replenish and rejuvenate their herds and flocks. Many inquiries are already coming in regarding the supply of livestock available. Canadian breeders and farmers must be prepared to meet the demands that will be made upon them. There is a great market ready to be captured. Canada has the opportunity to gain and hold this market, but the whole country must formulate a progressive policy without delay.

The Necessity of Standardization

Canadians are quite able to cope with the situation as it now exists. The extension of our export trade is extremely important because we have a large war-debt to pay. Therefore, we must have a complete organization of the forces of agriculture, founded on sound substantial business principles, led by broad-minded men, having the interests of Canada and agriculture at heart. This organization must work harmoniously for the uplift of the rural population and the improvement of farm conditions. We must also have a system of standardization of farm products in order to compete successfully on the world's market, against all comers.

The co-operative organizing of any industry has always, in the past, led to the production of a higher grade commodity. This is just what is wanted in Canada, if we can ever hope to gain a prominent place in the world's market.

Standardize or grade all products that adapt themselves to standardization and Canadian farmers will be stimulated to raise only the best. The paying for farm produce on a quality basis will do more to capture the English market than the wholesale damnation of neutral countries that fed Germany during the war.

The Government of Canada should see that the necessary marketing facilities are provided, to develop a permanent, extensive export trade, in chilled beef, meat and other animal products, also farm produce, including adequate control of temperature space in railway cars, storage warehouses and ocean-going vessels.

Canada has competed in the past on the English market, against countries which had a system of standardization. This problem was a hard one to solve because the English people will certainly buy those products upon which they can depend. Quality counts far more on the English market than sentiment. The buyers cater to a people having fastidious tastes and they believe that the best advertisement of any product is the wagging tongue of a satisfied customer.

Hence, it is incumbent upon Canadians to have as many articles as possible standardized, in order to gain and hold the confidence, not only of the English customers, but also the customers wherever Canadian products are sold.

It is not the object of this article to prove that the task is an easy one, but we will prove, beyond doubt, that standardization or grading has the beneficial effect of raising the quality of the product standardized. Together with this, it is a source of education to the producer and a great encouragement to the progressive individual, as well as a spur to the slothful one.

Training a farm pair for the stock judging team, on a Middlesex farm.

A glance at the British market reports, will convince the most skeptical observer, that standardized products bring more than similar ungraded commodities. In the case of eggs we find the following quotations:

Egg prices in Great Britain.	Dec. 10, '17	Dec. 11, '16
Irish	37/– 38/–	29/– 32/–
Danish, pickled	25/– 26/–	.....
American	24/– 26/–	19/– 21/–
Canadian	.....	21/– 21/6
Canadian, repacked	27/– 28/–	.....
Chinese	.....	16/– 18/–
Egyptian	.....	16/– 16/6

From this report it will be noticed that Canadian eggs sold for more than American eggs, Canadian eggs being standardized while American eggs are not. Irish and Danish eggs are all standardized and sell for higher prices because they have established a reputation which is world-wide.

The Livestock and Livestock Products' Act was passed by Parliament in September 1917. It brings all stockyards in Canada under control of the Dominion Government. A representative of the Government was appointed months ago to administer the Act.

A picture that will appeal to all lovers of livestock. When one likes animals both the animals and the admirers become better.

Since the Act received the endorsation of Parliament, no real effort has been made to put it into force, although its operation means a great deal to the farmers who use the stockyards. The Act should be put into force immediately, even if it does hurt the feelings of a few stockyard companies and commission men.

A campaign for the establishment of a Government grading system of livestock and meat products is gaining headway. The resolution adopted by the Manitoba Livestock Association in annual convention requesting the Dominion Government to institute a system of grading meats and meat products in all abattoirs and having grade stamped on the product will do much towards bringing system into our meat and livestock trade, as well as improving the quality and giving the producer a chance to get proper payment for quality.

The resolution should have asked for grading of livestock in the stockyards, in order that the men raising livestock would know the quality of the stock they were shipping. No educational scheme of improvement would be so effective as a grading system of livestock, where the producer would be able to secure Government returns as to the weight and grade of his stock.

The Standardization of Export Bacon Hogs

When we consider the production of the bacon hog, we find, that the non-grading of hogs has been the great obstacle that has kept the farmers from raising this type of hog exclusively. The propaganda instituted by the Government for the increased production of hogs of the bacon type did not receive the support of the farmers. The reason lies in the fact, that those men who attempted to carry out the desires of the Government found, on marketing their hogs, that no discrimination was made. The man who raised a medium type of hog received as much for his product as the man who raised the ideal bacon hog.

The farmers, as a rule, think they can raise a fat type hog cheaper than one of the bacon type. This is an erroneous idea and was disproved by actual experiments conducted by Prof. Day at the Ontario Agricultural College. However, we cannot expect the farmers to raise the best type of bacon hog, unless they receive, at least, forty or fifty cents more per hundred. Some encouragement must be offered in order to enlist and hold the support of the progressive farmers. Furthermore, such a system would increase both the quantity and quality of the hogs and hog products in Canada. The following scheme for grading might work satisfactorily. Pass a law compelling all hog buyers to have a license. At the point of killing grade all hogs, the buyer to keep a record in a check book of the grade and price paid.

Canadian farmers cannot hope to compete with the United States in producing the lard type of hog. Furthermore, it has been shown by investigations carried on by bacteriologists, that the lard hog is apparently more susceptible to tuberculosis than the bacon hog. In Essex and Kent counties, where the lard hog is raised to a great extent, we find that approximately thirty per cent. of the hogs are affected with this disease. Hence, we must stick to the bacon hog; but we must have quality. The Canadian bacon sold on English markets has never been able to successfully compete with Danish bacon, the reason being that Danish bacon is standardized and stamped. Prior to the war Danish bacon had a world-wide reputation, standing without a peer —the result of the system of grading which Denmark introduced years ago.

With the grading of the livestock we would eliminate the undesirable types, thus facilitating the standardization of the finished products.

In the breeding of beef cattle, this will apply equally as well, whether we sell on a home market or export. To produce the desired article for export in competition with world's supply, better sires are necessary.

It is well known that the sire influences the offspring to a very large extent. *The use of inferior or scrub sires is one of the surest ways to kill the extension of Canada's export trade.* It is only by careful selection of the best individuals, and the use of pure-bred sires that the Canadian breeder can hope to produce the desired quality product. Hence the great necessity of a system of grading in order to impress forcibly upon the farmers the fact that quality counts.

It is altogether too common a sight to see farmers raising "animals." No specific name can be applied to a great many farmers' livestock. The only remedy for this condition is the paying for stock on the qualty basis.

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THE HOME OF THE CLYDESDALE

By ANDREW FRASER

THE Clydesdale horse is found to-day wherever in the world a draft horse of power, action and worth is required. The original home and the land which has done most to build up and improve the undoubted qualities of the breed is a land of history and romance.

The South-western portion of Scotland has long been known for its advanced farming. Is it not famed for its Ayrshire dairy cows, its Galloway steers, its hardy black-faced sheep, and its Clydesdale horses?

A line drawn from the Firth of Clyde to the head of the Solway Firth comprises roughly what used to be the ancient Province of Galloway, a name now restricted to Wigtownshire and the Stewartry of Kirkcudbright, a "land of brown heath and shaggy wood, land of the mountain and the flood." None of the mountains are very high and much of the brown heath has been transformed by the diligent toil of its farmers into pleasant pastures and fertile fields.

What a world of Romance there is in this little corner of this "great little island." Here are the ivy-clad ruins of Baldoon Castle, the home of Sir Walter Scott's ill-fated *Bride of Lammermoor*, overlooked from the hill by the tall memorial of Wigtown's female martyrs, who were drowned in the flowing waters of the Solway for conscience sake, in the old days of Scotland's Reformation Covenant, when neither "young years nor yet old age could stop the fury of their rage," as the old moss-grown tombstone in the churchyard records the doings of the persecutors. There across the bay is Ellangowan Castle, the scene of the Wizard of the North's *Guy Mannering*, and Meg Merrilees' cave, the haunt of that notorious pirate and smuggler, Dirk Hatteraick. Nearby among the heather hills stands the tall obelisk to the memory of Dr. David Murray, the shepherd lad who learned to write with the burned end of a heather "birn" and afterwards became the greatest philological scholar of his age. Solway's sea still flows and ebbs across its level sands as in the olden days when young Lochinvar's love "flowed like the Solway, and ebbed like its tide." Across these rugged hills and deep valleys Crockett's *Raiders* reived and plundered in the "good old days," and over the Minnoch water Queen Mary's Bridge still throws its moss-grown single span, where Scotland's last Stuart Queen halted on her last ill-fated ride into the sister kingdom.

ON HIS NATIVE HEATH.
The criticism made by some overseas men about our horses in Canada is that they are good for legs, feet and quality, but lack in the middle. Such fault could not be found if all sires were as good as Bonnie Bucklyvie.

The land of Burns, the world-renowned plowman poet of Scotland; the hiding place of Bruce in his fugitive days; the scene of the slaying of the Red Comyn when Bruce struck him down on the steps of Dumfries church to "mak' siccar."

From the Brid-en' of Dumfries to Portpatrick, and from the Mull of Galloway to the river Clyde, with its busy hum of industry and commerce, the spirit and presence of by-gone days pervades the atmosphere.

But not alone for its mystic halo of history and romance is this picturesque corner of Scotland deserving of notice. From an agicultural viewpoint it holds one of the premier positions in the British Isles. Its carefully cultivated fields, its spacious farm buildings, its beautifully surfaced roads, its trim hedges and green pastures fill the mind of the farmer with a sense of ideal conditions for following the primitive calling of mankind.

It is a maxim of the text-book writers on Animal Husbandry that fertile valleys, plentiful and nutritious pasture combined with a mild climate, tend to produce large heavy horses, and this district of Bonnie Scotland well supports the theory. Here were born and bred the world-famous Clydesdale horse "Baron's Pride" and his high-priced and not less illustrious son, "Baron of Buchlyvie." To the former the majority of well-bred Clydesdales in Canada trace some part of their ancestry, and the name of that fine stud horse is no less known in the Domin-

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Western Canada Calls for Better Stallions

By A. L. MASON

JUST now the inter-provincial campaign for some sweeping scheme of stallion improvement is rampant in the three prairie provinces. What practical results may be evident when the smoke has rolled away through experience no one can forecast. In a word, each Government has suddenly awakened to the fact that the horse breeding industry is not making the progress that it should and something must be done. No undertaking seems too great, and no amount of money is lacking to put into effect a plan that would place a number of superior sires of the draft breeds at the disposal of the average farmer who is using his mares for the most indiscriminate methods of horse breeding. As one prominent Government official in Alberta very ably stated: *"Many a farmer starts with a cayuse mare, breeds her to a Clydesdale to produce more popular markings; breeds this produce to a Percheron to take the hair off the legs; next to a Belgian to add weight and length of rib, next to a Coach to clean up the legs and then to a thoroughbred to get speed."* While this may slightly overdraw the actual situation, it nevertheless illustrates in striking fashion the unsystematic methods followed by many in their horse-breeding operations.

Why the West should demand any very radical legislation or propaganda in favor of horse improvement cannot be readily understood by those in close touch with the situation. Our horsemen have for some years been searching east and south for the best representatives of the Clydesdale, Percheron and Belgian horse that could be bought at any price. Scores of districts have organized syndicates that have purchased stallions of outstanding breeding merit at long prices, and scores of other districts have organized clubs for hiring stallions at fees that should warrant the very best of breeding material. Then further each prairie province has on its statute books the most modern, and bordering on the drastic type, of stallion legislation intended to disqualify the inferior and unsound horse, and place a premium on the sire of superior merit. Yet in spite of all the above facts, Government action is vigorous in the direction of further improvement.

Paramount Flashwood—Reserve Grand Champion Belgian Stallion at Chicago, 1918. Weight, 2,090 lbs. Owned by Geo. Rupp, Lampman, Sask.

The first shot was fired last January when J. H. Evans, Deputy Minister of Agriculture for Manitoba, announced to the annual convention of provincial horse breeders at Brandon that the Government had decided on a policy of improvement of stallions. This policy was that the Government would buy a number of stallions in Ontario and the United States, import them to Manitoba and sell them for cash to farmers. The Government had apparently not sought for public opinion on the matter, as the announcement brought a flood of criticism from all sections of the public. The importer naturally opposed the scheme on the ground that it interfered with his legitimate business. The breeders of the province protested against the plan because it was in direct competition with them in the disposal of their surplus stallions. The progressive farmers opposed it because no Government official was, in their opinion, capable of buying stallions for them, and neither in Ontario nor the U.S. could the class of stallion be found that was good enough for use in their localities. The poor man opposed it because the terms of sale were cash only. Consequently there was no element in the horse-breeding fraternity that supported the scheme. Despite this unanimous protest the Government decided to go ahead with the plan if any response was apparent. But no response came and the scheme died a natural death.

Three months later, Alberta was heard from. In his major address to the Legislature in March, Hon. Duncan Marshall, Minister of Agriculture, announced that the Government had set aside $35,000 for the purchase of two sires, a Clydesdale and a Percheron, that

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FARMERS' MAGAZINE

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THE BOYS' AND GIRLS' CLUBS

ALTHOUGH the boys and girls of Canada have not taken hold of the livestock club idea as they have in the States, the work already done and the results achieved warrant increased interest in this feature of educational work. In Manitoba and Saskatchewan the benefits are particularly good, while in several counties in Ontario, the farms have been given a start to better livestock in a way that was impossible of achievement by any other route.

Boys and girls who are reared in our beautiful Canadian setting would be glad to forever hear the call of the fields, instead of the clang of the trolleys, if their real interest was aroused early in life. An intelligent direction by the parents is the best way of making ideal farm citizens. Helpful leadership by the agricultural representatives and inspirational staging by our departments of agriculture are good follow-ups. But the real strength of our rural life lies in our homes. Build them on the right basis and the later life will take care of itself.

We hope to inculcate in the minds of all farm people first of all that God made our country beautiful, opened up there the beauties of his temple in the green fields and wild woodlands and that cities were man-made, often hiding from our minds the rainbows of hope and homely joys. We hope to encourage every boy and girl in the belief that calves, and pigs, and lambs, and colts and all growing things are splendid friends to have and carry ideals to us if we will only see them.

Perhaps our greatest danger lies in taking our blessings too much as a matter of course or our changing seasons, our beauties of nature and our splendid riches as commonplace and unimportant. Against this temptation, let us look up to the hills; let us contemplate the wealth of the skies; let us, in a word, take time to look above our duties, and enjoy our living.

TREATING UTILITIES FAIRLY

THE judgment of the Board of Railway Commissioners, says *The Financial Post*, in granting an increase of ten per cent. to the Bell Telephone Company in exchange rates, and higher long-distance tolls for a certain period, as yet undefined, must be considered as a fair solution, however unpopular any increase in the cost of an article so widely used must be. It was clearly established at the hearings that the company had had to bear heavy increases in costs of materials and wages, and that there had been no compensation in increased charges.

The judgment granting the application of the company to the extent referred to was inevitable under the conditions outlined, and the Board must be commended for its action in the face of the strong movement to prevent any relief by a large number of municipalities. The Board quite properly, in the case of a public utility, keeps a string on the higher rates it has allowed: they are subject to recall, to readjustment, whenever conditions warrant. Meanwhile the company is given fair treatment, permitted a fair return on its investment, and on its part it will be required to provide an adequate service to the public.

This system when worked out along reasonable lines should be regarded as an ideal method of operating the public utilities of the country. Private operation has always in the end proved the most efficient: on the other hand, in the operation of what must always for the convenience of the public be a monopoly, there should be some manner of regulation by a body such as the Railway Board representing the State. The early history of the railroads in the United States went to one extreme; the policy that the Dominion Government would seem to be drifting towards in connection with all the roads, except the Grand Trunk, runs in the other direction, equally extreme and equally objectionable.

DENTAL INSPECTION FOR RURAL SCHOOLS

TIMES are looking up for the children in the rural schools of Ontario. Not only is medical inspection to become general but a survey is being made for dental inspection in all the schools of the province, with an endeavor to arrange for the treatment of cases where for any reason it is difficult to secure the service of a local dentist. It is well known that where a school is five or ten miles from a dentist's office, some children in the section are going to have their teeth neglected unless the dentist is brought to them. It is also pretty generally admitted that without some regular inspection very regrettable troubles are likely to get a start past repairing—as most of us know from experience. The best community is not free from them.

In the city of Washington, where dental inspection has been carried on for some years, the inspector gives the following report: During two years he examined 10,230 children between the ages of six and sixteen. He found 32,307 cavities in the teeth of these children. He found that of the permanent teeth 984 had been lost. He found a total of 81,910 teeth that needed systematic cleaning, and 6,056 that were so far decayed that they needed extracting. Of the total number of children examined, 9,071 had cavities in their teeth and 468 had abscesses at the roots of the teeth. Washington is a city of comparatively good homes and well-to-do people; dentists would be conveniently near to everyone. It would not be surprising if the dental troubles in a good rural community would be more serious.

The dental clinic held at Streetsville last year under the direction of the Women's Institute and the Department of Agriculture proved a popular blessing to the neighborhood. No doubt it will be just as welcome in other places. Dr. Conboy, who is now in charge of the survey, has been most sympathetic and helpful where the work has been taken up locally and we believe the movement will have the support of every thinking parent and teacher and trustee.

Here are Some Leaders in the Mid-June Number.

THE Tone of Our Country Homes.
By ETHYL MUNROE.

WHAT is the Ideal Farm Tractor?
By PROF. L. J. SMITH, Man. Agric. Coll.

LOOK After the Calves.
By R. RUSSEL FLEMING

WHAT About Flax in Canada?
By THE EDITOR.

There are many more interesting features. A new serial story by William Pritchard Eaton is announced. The departments are scheduled full of meat and as usual there is some unexpected feature like Col. MacLean's article in this issue.

HANMER BANQUETTED

ROLO Mercena De Kol was banquetted at Norwich on Tuesday evening last. The Canadian Holstein that beat the world's records deserved the honors given and her owner, J. B. Hanmar, deserves well of his fellow breeders in Canada for helping to put Canada on the livestock map of the world. The future for our livestock is assured if we have more men influenced by Hanmer's win, resolving to make their breeding efforts attract the outside world to our doors.

A cow that makes over seven pounds of butter per day in post war values should attract the attention that Cobalt and Klondyke have often taken.

JOHN BRIGHT REMEMBERED

AN interesting ceremony took place at Groveside cemetery in Ontario County, on May 24th, when a memorial stone to the late John Bright was unveiled. For years Mr. Bright was a part of the lives of livestock men in this famous old county, and in his wider life as Livestock Commissioner at Ottawa, he carried the same enthusiasm, the same devotion to the work of better livestock, and the same kindliness of manner that endeared him to everyone with whom he came in contact.

The plain gray granite block in Groveside on which are engraved his name and years, the gift of his fellow laborers and friends, attests in a greater way than peroration to Myrtle's honored dead.

EDITORIAL NOTES

THE scrub sire is the goat now.

BETTER livestock in every province.

WHY should public ownership compete?

WET springs generally bring good years.

ALL wool buyers are now buying on the graded basis.

MEDICAL inspection in our schools is off to a good start.

START a pure-bred herd with the best animal you can get now.

NEVER was a good land drainage shown to better advantage than it is this year.

BUTTER and egg prices are more respected these days than knighthoods or garters.

SOAP manufacturers seem to be complaining of the shortage of fats due to oleo demands.

TIME and time again, one notes the way the country's call comes to the unassertive back benchers.

WHAT would happen if farmers struck for eight-hour days and guaranteed ten hours' pay per day!

HAWKER and Grieve made a gallant attempt to fly the ocean. The job will soon be easily done by many.

BUCKWHEAT, corn, potatoes, millet and turnips are June planted crops that can redeem many a drowned field.

PLANT some shade trees along your road front even yet as June plantings often do better than May planting.

HELP the soldier settler at every chance. He will have difficulties and the mutual social life of the vicinity will pay.

MACKENZIE KING is being talked of by the rank and file as the next Liberal leader in Federal politics. He has many points in his favor.

LAND-GRABBERS, even farmers who buy more farms, are indefensible unless production is increased and more people are settled thereon.

GOOD roads legislation should take every care with our good farm front improvements. There is needless slashing and disfiguration in many places.

WE want no soviets nor committees of fifty nor striking autocracies who issue permits and set at defiance Municipal Governments in this free country.

FARM profits can not become too great for the country's good, for when they become attractive, people will leave the towns and thus redress the balance.

ANYWAY farm organizations, United Farmers and other farm bodies make a big mistake to hitch up with labor unions too tightly. What is there in common?

J. H. GRISDALE becomes Deputy Minister of Agriculture at an important time in our agricultural prosperity. Much of the success of the department depends upon his management and in it he will have the sympathetic co-operation of all agriculturists.

Arkell Points to Livestock Trade

By THE EDITOR

TRADE overseas in farm animals, and rumors of trade have been and are current from ear to ear. Reconstruction of Europe, and Peace re-establishment in the rest of the world both are pushing private enterprise again to its own. Naturally the business farmer is looking for his share of the overseas trade in commercial as well as in pure-bred livestock trade. Rumors say that a big Western man has orders for 50,000 horses and that others carry round in their pockets smaller orders for cattle to go to France. But ocean transportation and credit arrangements are so uncertain that individuals have been appealing to the Federal Agricultural Department to get relief.

But the livestock department at Ottawa has been equally wide awake. The Commissioner has been over the ground and has made a trip home, only to go back as quickly as possible to assist in seeing that Canada gets her share.

In this short interval that he was in Ottawa, a conference of the provincial livestock officials, breed associations and farm press was held and the livestock commissioners' knowledge of the trade revealed. A proposal made by the department was carried. By it companies here are formed to handle these trade sales that are made by the commissioners' staff overseas.

Eggs and Poultry

"The United Kingdom imported 40 per cent. of its eggs and 30 per cent. of its poultry previous to the war," said Mr. Arkell. Of this one-half came from Russia. Now Russia is not an exporter as the country is stripped bare of its needs. It is not likely that it will be in the export market for some considerable time. Denmark and Holland are not now shipping to England but to Germany and the enemy countries. In France and Belgium, especially in the devastated areas, they are in a difficult position and will need to import a great deal of these supplies for some time. Roumania and Serbia have been swept bare of supplies and, taking everything into consideration in Europe, it is estimated that there are 187,000,000 fewer fowls than there were in 1914.

The Canadian eggs are in higher repute now than the American product. The chief reason is that the eggs are produced in a cooler climate, they have more body to them and they cross the ocean in better shape than do the American eggs. Besides this our grading and inspection land the eggs in the British market in first-class condition and safeguard the consumer. It would look as if our poultry and egg trade with the United Kingdom is going to be a good market for a considerable time.

In 1913 Denmark had two and a half million hogs. This stock has now been reduced until she only has 700,000 at the present time. At that time she practically dominated the British market with bacon, but now none is being exported to England and what little they do produce is going to the enemy countries. The total amount of their exports to Britain in 1918 was only 21,000 cwt.

The United States is exploiting the market in Europe. The American hog trade suits continental needs better and since they have no specialized trade the U.S. gets a good outlet for her fat product. Therefore, we can best concentrate our efforts on the British market as the United Kingdom is short in supplies of high-class products. In the United Kingdom the hog product has suffered there because of the conservation of feed. The Irish killing has been reduced from 16,000 weekly to a quarter of that, while Great Britain has been reduced similarly.

The total result of the situation is that I am satisfied that Canada can take Denmark's place in the British market for bacon. They are short of feed now while the crops this year will not be up to normal. The situation this fall is looked upon with considerable concern by a great many people because of this.

The United States does not understand the curing of the Wiltshire sides. They use more salt and the consumer in England has had to eat more salt and more fat, and he has not relished the situation. This has put the Canadian bacon into a premier place in Great Britain, and it is unlikely that we will ever lose this trade if we keep alive to the needs.

The Outlook For Horses Overseas

I saw army horses sold at auction stables in Great Britain where the common stuff sold at very ordinary prices. I never saw London horses look so poor as they did on this trip. The demand for heavy horses up to and over 1,800 lbs. in weight is good. I saw the heavy horses sold at Tattersall's. These are mostly in good shape, the best class of horse coming to London, and although their legs, feet and action were poor they brought from 140 to 150 guineas. One man who uses two hundred horses in his business sent up to the market an order for twenty for which he paid 175 guineas apiece.

In breeding for the British market the following points must be kept in mind: They want a heavy draft horse there. We must send out only the best classes we have. These horses must be from five to seven years old, well conditioned, well broken, good mannered, weigh from 1,600 to 2,000 lbs., the heavier the better, be well bred, have good action and good teeth.

One way that the British purchaser criticizes the Canadian draft horse is that it does not have a good middle. We have paid more attention, they say, to the feet and legs and the character of the horse than we have to his ability to consume feed and to stand hardship.

Regarding the export business on the continent, it is apparent that they want our surplus light horses running from 1,000 to 1,250 lbs. France, Belgium, Italy, Roumania and Poland are in need of large numbers of these horses. Poland, as a hilly country, is prepared to take a large number of such horses as they are about swept bare of motive power in planting. The outlook for Poland's requirements seems to be around 500,000 horses as whole districts are bare. But here the whole question of credit comes as to whether we can do anything in trade with this country.

In Roumania it is reported that the horses are wanted so badly that they are selling from four thousand to five thousand marks apiece. The mark is equal to about twenty-four cents in normal times. This would mean from $800.00 to $1,000.00 apiece for these horses.

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"Citizens Not Dividends," says Black

By F. M. CHAPMAN

NO question of Government can be settled without reference to the humanitarian side. There is no mechanical way of making people happy. One can fit a bunch of Yorkshires to command the high market for Wiltshire sides, under rigidly economic conditions and figure your returns to a nicety. Not so with people. Much less so with soldiers, settling down to civil life after a world-erupting existence through which they have recently gone. The human side comes in. Sentiment plays a no uncertain part. Tact and diplomacy, begotten by human kindness and charity for mankind, are essentially the first qualifications in the leaders in soldier settlement.

W. J. Black, Chairman of Canada's Soldier Settlement Board, has grasped this fundamental fact and is abundantly qualified to elucidate his beneficient designs on the social lives of our returned citizens.

"My idea," said he, "is that this work should be looked upon from the viewpoint of citizenship rather than dividends. We want to assist these men in such a way as to fit them into the fabric of Canadian national life—a real part of the woof and warp of society. No reasonable expenditure, if it secures this end, is to be regarded as wasted.

"These men are generally good fellows who left real home and neighborhood lives and who will make good neighbors and citizens if a proper direction and assistance is rendered at the right time. It is our business to see that these fellows succeed. Normal human nature loves a home and friends. The healthy man detests failure. All we ask of the intending settler is that he will work and will accept advice."

Mr. Black's plans along with the various co-operating provincial departments to have superintendents of soldier settlement communities whose business it will be to see that helpful assistance, friendly advice and technical information are given to individuals. These superintendents will co-ordinate the work all over Canada, and in the years to come handle the growing problems as they arise.

According to Hon. Mr. Meighen's bill before the House, it has been arranged to secure the co-operation of hundreds of successful farmers throughout the Dominion who have willingly offered to take soldier settlers on their farms, not as mere hired men but as students seeking knowledge, and will train them and assist them for the duties of farmers so that when the soldier settler goes on a farm of his own he is equiped with the necessary practical knowledge.

During the time a soldier is in training the Soldier Settlement Board will pay liberal allowances for the subsistence of himself and his family.

Professor Black has laid down certain principles guiding the qualification committees in passing applicants for farm loans. These "Principles of Policy" are as follows:

1. To settle only men whose best interest will be served by engaging in farming.

2. To settle soldiers only on land that is suitable to be made a first-class home, a place where money can be made, where the soil is sufficiently fertile, and the location is right.

3. To settle no soldiers far from existing railways or organized civilization.

4. By a system of collective purchase, to guarantee soldier settlers the best value that can be obtained anywhere in the purchase of live stock, implements and other requirements.

5. To settle and assist the soldier settlers in the management of their activities, if necessary on the community plan, so that the best results may be obtained. Qualification Committees will pass on the intended settlers before they will be enabled to take up land, thus providing for the minimum disappointment and the maximum of success.

Views of a motor sleigh rigged up with a propeller for use on the ice on the north shore near Manitoulin last winter.

View of the same machine showing steering device.

The Other Things in the Hope Chest

How an Old Story Touches a Modern Question

By GENEVIEVE

HOW closely some of the old books touch some of the modern problems! A woman who had been spoiled by the social and educational system that makes no attempt at fitting a girl to be a woman, looking back over some painful mistakes said: "The trouble with me was that I was brought up to get married—not to be a wife." She didn't mean just that she had been taught parlor accomplishments instead of cooking and sewing. She meant that when she came to the place where something depended actually on herself, she hadn't measured up as a woman. It wasn't her fault, entirely—no one had ever expected anything of her before she was married; everyone expected everything of her afterwards. Everyone had petted her on account of her childish helplessness as a girl, but everyone agreed that it was neither charming nor comfortable in a wife.

The "girls in training" movement appeals pretty readily to the business girl, the college girl, the teacher, the girl interested in social service and the girl who loves the outdoors—not only because they see the beauty of the perfect four square girl whose education has been broadened from the three R's to the four H's, the training of the head, hand, heart and health—but because they know the training will help them in whatever they are doing. Perhaps none of them think that it will be of the greatest help to them after they have left their present work, that it would have been a help to the home keeping women of the country for generations back. I believe even Dickens would have approved of it. If June is a month of special interest in weddings, it is a good time for every girl to begin to read the story of "the Child Wife," in David Copperfield. It tells in a very gentle way that other things than embroidered linen and rosetted lingerie and cobweb caps must go into the bride's hope chest if certain little tragedies are to be avoided. The box and its whole perishable contents might be swept away by a fire on the eve of the wedding but life would still go on for the new family. The only vital thing that the girl brings in her dowry is what she is herself.

The trouble with me was that I was brought up to get married, but not to be a wife.

WE get a new glimpse of Dora, the winsome girl who has captivated David's heart in former chapters, when he comes to tell her that his aunt has lost her money—that he will have to work for a living—but that with her to inspire him he has no fear for the future. The distracted young man describes the interview as follows:

Dora came to the drawing-room door to meet me; and Jip came scrambling out, tumbling over his own growls, under the impression that I was a bandit; and we all three went in, as happy and loving as could be. I soon carried desolation into the bosom of our joys—not that I meant to do it, but that I was so full of the subject—by asking Dora, without the smallest preparation, if she could love a beggar?

My pretty, little, startled Dora! Her only association with the word was a yellow face and nightcap, or a pair of crutches, or a wooden leg, or a dog with a decanter-stand in his mouth, or something of that kind; and she stared at me with the most delightful wonder.

"How can you ask me anything so foolish?" pouted Dora. "Love a beggar!"

"Dora, my own dearest!" said I, "I am a beggar."

"How can you be such a silly thing," replied Dora, slapping my hand, "as to sit there telling such stories? I'll make Jip bite you!"

Her childish way was the most delicious way in the world to me; but it was necessary to be explicit, and I solemnly repeated:

"Dora, my own life, I am your ruined David!"

"I declare I'll make Jip bite you!" said Dora, shaking her curls, "if you are so ridiculous."

But I looked so serious that Dora left off shaking her curls, and laid her trembling little hand upon my shoulder, and first looked scared and anxious, then began to cry. That was dreadful. I fell upon my knees before the sofa, caressing her, and imploring her not to rend my heart; but, for some time, poor little Dora did nothing but exclaim: "Oh dear! oh dear! And oh, she was so frightened!"

In spite of everything, however, they were married.

It was a strange condition of things, says Dickens, the honeymoon being over and the bridesmaids gone home, when I found myself sitting down in my own small house with Dora; quite thrown out of employment, as I may say, in respect to the delicious old occupation of making love.

It seemed such an extraordinary thing to have Dora always there. It was so unaccountable not to be obliged to go out to see her, not to have any occasion to be tormenting myself about her, not to have to write to her, not to be scheming and devising opportunities of being alone with her. Sometimes of an evening, when I looked up from my writing, and saw her seated opposite, I would lean back in my chair, and think how queer it was that there we were, alone together as a matter of course—nobody's business any more—all the romance of our engagement put away upon a shelf, to rust—no one to please but one another—one another to please for life.

When there was a debate, and I was kept out very late, it seemed so strange to me, as I was walking home, to think that Dora was at home! It was such a wonderful thing at first to have her coming softly down to talk to me as I ate my supper! It was such a stupendous thing to know for certain that she put her hair in papers. It was altogether such an astonishing event to see her do it!

I doubt whether two young birds could have known less about keeping house than I and my pretty Dora did. We had a servant, of course. She kept house for us. But she preyed upon our minds dreadfully. We felt our inexperience, and were unable to help ourselves. We should have been at her mercy, if she had had any; but she was a remorseless woman, and had none. She was the cause of our first little quarrel.

"My dearest life," I said one day to Dora, "do you think Mary Anne has any idea of time?"

"Why, Doady?" inquired Dora, looking up innocently from her drawing.

"My love, because it's five, and we were to have dined at four."

Dora glanced wistfully at the clock, and hinted that she thought it was too fast.

"On the contrary, my love," said I, referring to my watch, "it's a few minutes too slow."

My little wife came and sat upon my knee, to coax me to be quiet, and drew a line with her pencil down the middle of my nose; but I couldn't dine off that, though it was very agreeable.

"Don't you think, my dear," said I, "it would be better for you to remonstrate with Mary Anne?"

"Oh, no, please; I couldn't, Doady!" said Dora.

"Why not, my love?" I gently asked.

"Oh, because I am such a little goose," said Dora, "And she knows I am!"

I thought this sentiment so incompatible with the establishment of any system of check on Mary Anne, that I frowned a little.

"Oh, what ugly wrinkles on my bad boy's forehead!" said Dora; and still being on my knee, she traced them with her pencil, putting it to her rosy lips to make it mark blacker and working at my forehead with a quaint little mockery of being industrious that quite delighted me in spite of myself.

"There's a good child," said Dora; "it makes its face so much prettier to laugh."

"But, my love," said I.

"No, no, please!" cried Dora, with a kiss, "don't be a naughty Blue Beard! Don't be serious!"

"My precious wife," said I, "we must be serious sometimes. Come; sit down on this chair close besides me! Give me the pencil! Now let us talk sensibly. You know, dear"—what a little hand it was to hold, and what a tiny wedding-ring it was to see!—"you know, my love, it is not exactly comfortable to have to go without one's dinner. Now, is it?"

"N—n—no!" replied Dora faintly.

"My love, how you tremble!"

"Because I know you're going to scold me," exclaimed Dora, in a piteous voice.

"My sweet, I am only going to reason."

"Oh, but reasoning is worse than scolding!" exclaimed Dora, in despair. "I didn't marry to be reasoned with. If you meant to reason with such a poor little thing as I am, you ought to have told me so, you cruel boy!'

I tried to pacify Dora, but she turned away her face, and shook her curls from side to side, and said, "You cruel, cruel boy!" so many times, that I really did not exactly know what to do; so I took a few turns up and down the room in my uncertainty, and came back again.

"Dora, my darling!"

"No, I am not your darling. Because you must be sorry that you married me, or else you wouldn't reason with me!" returned Dora.

I had wounded her soft little heart, and she was not to be comforted. She was so pathetic in her sobbing and bewailing, that I felt as if I had said I don't know what to hurt her. I was obliged to hurry away; I was kept out late; and I felt all night such pangs of remorse as made me miserable. I had the conscience of an assassin, and was haunted by a vague sense of enormous wickedness.

David was very proud of his pretty young wife and anxious to have his bosom friend, Traddles, visit them and see her to her best advantage in her own house.

"One of our first feats in the housekeeping way," the story goes on, "was a little dinner to Traddles. I met him in town, and asked him to walk out with me that afternoon. He readily consenting, I wrote to Dora, saying I would bring him home. It was pleasant weather, and on the road we made my domestic happiness the theme of conversation. Traddles was very full of it; and said that, picturing himself with such a home, and Sophy waiting and preparing for him, he could think of nothing wanting to complete his bliss.

I could not have wished for a prettier little wife at the opposite end of the table, but I certainly could have wished, when we sat down, for a little more room. I did not know how it was, but though there were only two of us, we were at once always cramped for room, and yet had always room enough to lose everything in. I suspect it may have been because nothing had a place of its own, except Jip's pagoda, which invariably blocked up the main thoroughfare. On the present occasion, Traddles was so hemmed in by the pagoda and the guitar-case, and Dora's flower-painting, and my writing-table, that I had serious doubts of the possibility of his using his knife and fork; but he protested, with his own good-humor, "Oceans of room, Copperfield! I assure you, oceans!"

There was another thing I could have wished—name-

Continued on page 34

WHY DID WE LET TROTZKY GO?

Canada Lost an Opportunity to Shorten the War

By LIEUT.-COLONEL J. B. MACLEAN

THE way things look at the moment, some Canadian politicians or officials were chiefly responsible for the prolongation of the war, for the great loss of life, the wounds and sufferings of the winter of 1917 and the great drives of 1918. And they are doing their very best to prevent Parliament and the country from getting at the facts. While our splendid armies were hanging on in France and our loyal leaders at Ottawa and throughout the country were straining every nerve to support them with more men, someone was betraying them at Ottawa and down at Halifax. When General Sir Sam Hughes asked some questions in the House of Commons, Hon. Mr. Burrell, Secretary of State, simply said there was no information on the subject; which was untrue. There is a lot of information obtainable, but the persons who know seem to be using every effort to hide the disgraceful part they may have played and prevent any effort to trace the episode to the persons higher up.

OFFICIAL reports such as Sir Douglas Haig's review of the war and many speeches and other utterances of men who know, show that but for the Russian breakdown the war would have been over a year earlier.

The man chiefly responsible for the defection of Russia was Trotzky. Trotzky—the real man now directing Russian affairs, acting under German instructions—was arrested and held in the internment camp at Amherst, N.S., on the very definite instructions of the British Secret Service, who knew exactly who he was and what he was proceeding to do. They protested strongly against our releasing him. Yet our authorities released him at the request of someone at the British Embassy, Washington, acting they say on the request of someone in Washington.

Let us look at the evidence as uncovered by the British Secret Service in Russia, and by the equally excellent U.S. Secret Service and passed to the British. Originally the British found through Russian associates that Kerensky, Lenine, and some lesser leaders were practically in German pay as early as 1915 and they uncovered in 1916 the connections with Trotzky, then living in New York. From that time he was closely watched by the clever section of the Police Department known as the "Bomb Squad." In the early part of 1916 a German official sailed for New York. British Intelligence officials accompanied him. He was held up at Halifax; but on their instruction he was passed on with profuse apologies for the necessary delay. After much manœuvring he arrived in a dirty little newspaper office in the slums and there found Trotzky, to whom he bore important instructions. From June 1916, until they passed him on to the British, the N.Y. Bomb Squad never lost touch with Trotzky. They discovered that his real name was Braunstein and that he was a German, not a Russian.

The Career of Trotzky

A RUSSIAN acquaintance who recently passed through Toronto told me he knew him very well, suspected him and once as a pretext asked him to translate, carefully, a document into German and Russian. Trotzky failed on the Russian, but his German was perfect.

The U.S. Intelligence Department further found that he had for years been in the German Secret Service in Russia. In August 1914, he had ostentatiously been expelled from Berlin. He went to Paris, where he was soon identified as a German. He had to get out. Then he went to Spain. The Allies protested and he moved to the States, where he became active in Russian circles there and in Canada. Russians in Western Canada say he was instrumental in getting over 5,000 foreigners to sail from Vancouver and other ports for Russia who were trained and instructed for propaganda purposes. They were largely Germans and Austrians traveling as Russians.

He organized those who remained behind into groups, and by this time enough was known to take him very seriously. Long before the Russian Revolution occurred he had announced it in New York. He was closely watched and all his speeches were recorded. He was identified and at a meeting on February 2, 1917, he was introduced as Mr. Bornstein. Just when the U.S. was severing relations with Germany and war was certain, he started the campaign against militarism and the doing away with the U.S. Government once and forever. A typewritten copy of the speech was given to Colonel Biddle of the U.S. army, who that night read it over the phone to Colonel Van Deman in Washington. Another copy went to the British Secret Service.

On March 26, the night before he sailed, Trotzky addressed a large meeting organized by the German Federation to say farewell. The Bomb Squad took every word down through a dictaphone, and made a list of those present. In all 180 of them were to sail. Emma Goldman, who used to visit friends in Toronto, was on the platform. Trotzky explained quite frankly and clearly that "they were going to Russia to push the Revolution as it ought to be pushed."

"You who stay here," he cried, "must work hand in hand with the revolution in Russia, for only in that way can you accomplish revolution in the United States."

ON the S.S. Christiania, on which he sailed, were several British Secret Service officers. On arrival at Halifax, on April 3, they reported Trotzky and four associates to Captain Making, R.N. These men were taken off the ship under the direction of Lieut. Jones, R.N.

It is an extraordinary fact, the police officials tell me, that these agitators, who are so bold and courageous on the platform when stirring up a mob to rebel against authority to seize anything they want, are the most arrant cowards when they themselves have to face authority. Trotzky was no exception. He crouched and whined and cried in abject terror. When he found he was not to be shot his bluff returned and he protested violently. Later he assumed a religious air when he objected to the house in which, by chance, he was temporarily held. He was eventually turned over under armed guard to the Canadian authorities, who placed him in the internment camp at Amherst, where several hundred enemy aliens were in confinement, and are still there.

The British Secret Service handed over full details to the authorities at Halifax, including a copy of Trotzky's speech. They knew he was a German, not a Russian. With his four companions he was held for some time. His wife and other persons, plentifully supplied with money—which the records show came from German sources in New York—were in communication with Washington and New York. The British Secret Service people, knowing they had a very important German prisoner, fought bitterly against the release. The minor Canadian officials, knowing the facts, were amazed when they were ordered to discharge the crew with honors.

GENERALLY the explanation is given that the release was done at the request of Kerensky, but months before this British officers and one Canadian, serving in Russia, who could speak the Russian language, reported to London and Washington that Kerensky was in German service. Finally it is said it was done at the request of the British Embassy at Washington over the head of the British and American Intelligence Department; and that the Embassy acted on the request of the U.S. State Department, who were acting for someone else. This is not the view of the U.S. Intelligence Department, for they were so astonished that they sent one of their trusted officials to Ottawa to investigate. He visited among others the Secretary of State's Department.

That the request came from the British Embassy at Washington is an explanation, but no excuse, for the release of Trotzky by Canadian authorities who knew the importance of their prisoner. The utter incompetence and helplessness of our Embassy was well known. It was a joke in the U.S. until Lord Reading took charge. That the lesson of what the Empire has suffered in this war—because of its mistaken diplomatic and consular ideas, several times exposed in these columns—has not been learned is evident from a recent issue of the *Daily Mirror*, London, which favors the appointment of Sir. J. W. Lowther, Speaker of the House of Commons, as Ambassador at Washington, because "it would give great satisfaction to the American people, for Lowther possesses in an eminent degree all the qualities required to make a great ambassador—intellectual distinction, diplomatic experience, and the gift of cultivated oratory."

Yet Hon. Mr. Burrell tells Parliament that there are no records. Who are they trying to protect or hide?

Trotzky Estranges British Labor

TROTZKY is very noisy and talkative and unprincipled, and to this is due the very important change of attitude on the part of British Labor. Whether by prearrangement or not is unknown, but Trotzky, when waiting at Stockholm on his way to Russia, met certain British Socialists and Labor Leaders who were then in entire sympathy with the Russian revolution. Trotzky's pictures of the opportunities Bolshevism opened for its leaders—wealth untold and lavish luxuries to be enjoyed, the making of maidens a public property—disgusted the sturdy British workman and they told him so. Finding he had made a mistake Trotzky sought to get them out of the way. Stockholm was full of German agents. One British Labor leader was given a cup of coffee. Being suspicious he, unnoticed, exchanged it with his companion, a German. The latter died in twenty minutes. The British Unionist was arrested, but it was proved that the dead man was a German spy, who had put the poison in the Englishman's cup. This man exposed the Bolsheviki plans to British Unionism. Subsequent events confirmed in every detail the truth of his stories.

Finally Peter Wright brought first hand news from Petrograd to a large gathering and British labor changed completely. Peter himself had a narrow escape. Finding the Bolsheviki policies did not appeal to him Trotzky's agents sought him. Warned by friends he escaped in a coffin brought to the hotel for a man who had died. He was being buried when he was released and got away in disguise by friendly members of the Russian Sailors' Union. His arrival in England was most timely. Inspired by the misrepresentation of men like Henderson, Labor had, by a majority of over 30,000, adopted a Revolutionary policy. After hearing from Mr. Wright—himself a life-long labor agitator—the policy was revised by a larger majority the other way. One of the great Scotch leaders, who was a hot Revolutionist before the war, is now saying that the fearful experiences of Russia under Trotzky had caused him to drop the first letter of his watchword. He is now an "Evolutionist" and has been using his great influence successfully on the British workers to resist German Bolshevik propaganda and on the British employers to grant without pressure every reasonable demand from their employees.

At another time our officials were instructed to inform the press that Trotzky was an American citizen traveling on an American passport; that his release was specially demanded by the Washington State Department; that in view of the precarious international relations existing at that time it was necessary for Canada to release him. But Canadians knew enough of Trotzky's history from American-British sources to make a fight against his release, by at least making the facts public. If this had been done no doubt the Americans would have insisted upon uncovering the influences working for Trotzky.

If the matter had ended in Canada with the release of Trotzky there would perhaps now be nothing but regret for the lack of backbone in our officialdom: nothing but another example of a case where politicians brought appalling losses upon us by refusing to be guided by our military experts, and this time confirmed by those of our Allies.

But it did not end there. On the other hand it began to show itself, particularly in Toronto, where flourished one of the most important groups of Anarchists organized by Trotzky to prepare for the Canadian Revolution. At one time there were over 1,600 members in this group and they did some sensational work with the local press and on the unsuspecting returned soldiers. When the leaders advocated the raid of stores and private homes the police took some of them in and they are now working in smaller groups.

At Ottawa Trotzky had, and continues to have, strong underground influence. There his power was so great that orders were issued that he must be given

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THE COMING *of the* GOLDEN HOOF

By JAMES SHEPHERD

The well-trained Collie is an invaluable shepherd's helper.

THE sheep pen on Belleview Farm was fairly close to the house, and the yards to the south of it were warm and sunny in late March and early April, when the lambs first made their appearance. In these yards, Jack, the young son of the proprietor of the farm, might be found for the greater part of all favorable days spending his time fondling the young lambs. The sun-warmed sheep fold was an ideal place for a farm boy to loaf and Jack was on the job early each spring. From the very beginning of his outdoor life on the farm he was interested in sheep and, to use an expression often heard in the family, he fairly "came up in the sheep pen." He became familiar with all the work connected with the farm flock and gradually gained from experience a wide knowledge of sheep breeding, feeding and management. There is an old saying that "familiarity breeds contempt." Such was not the case with Jack and his father's sheep and lambs. The boy got so familiar with his golden-fleeced farm pets that he knew them all and had names for nearly every one. They had every confidence in him and would come at his call at any time. It is necessary to success with any class of live stock that the attendant and his stock understand one another and that the latter have complete confidence in the former, showing no fear when he approaches. This is particularly true with sheep and Jack soon learned that kindness and quietness were valuable in the sheep yard and that it was not possible for the feeder to know his charges too well.

Starting back with Jack's earliest experience with sheep is done simply to show the advantage one has who grows up with the business. This applies to all business and contrary to the belief of many is just as true of live stock farming as it is of any other enterprise. Of course it is possible for a breeder to start with sheep later in life but even so, as a general rule, it is advisable to start on a comparatively small scale and learn the ins and outs of the new work with a few animals rather than take the greater risk of failure with large numbers. *There are two ways of growing up with the business; one is to be born into it, the other to start when older on a small scale and develop.* Of the two, the former may be more successful and Jack had the advantage of this method.

When the lad's interest in sheep was so well marked as to be commented upon by his father the latter deemit advisable to encourage Jack as much as possible. Accordingly, one of the best ewes in the flock was given to him outright with the understanding that any increase which resulted was to be sold and the money used as the lad saw fit. The flock of some forty breeding ewes was composed entirely of grade Shropshires, and the ewe which fell into the possession of the lad was a prolific breeder and altogether a specimen of which any boy would feel proud. Jack was seven years old when he became the owner of this sheep and started in the live stock business for himself. In those days sheep breeding was not very popular in Ontario and since then, up to a few years ago, the Ontario farmer has not been giving the attention to sheep which he might have done. Jack got inspiration through ownership. He not only looked after his own sheep better but he paid closer attention to the care and management of the entire flock, helping with the feeding and care more and more as the days went by.

By using high-class, pure-bred sires of the same breed of which the ewes were good grades the flock on the farm gradually improved. In the fall of each year before the breeding season the old and cull ewes were weeded out and the best of the young ewes retained to take their place. Even so, and with the best of care, there was not a big profit in the business. Jack's ewe, a little better than the average of the flock, sheared on the average about eight pounds of wool per year. At first this wool was always washed and generally some day between May 24 and June 1 was set apart for this work. As time went on, however, it was learned that washing was not very profitable and that for the good of the sheep they should be shorn in late March or early April, which of course necessitated that the wool be put on the market in the unwashed condition. This early shearing caused the flock to do better and the wool brought in just as much money as when sold at a slightly higher price per pound in the washed condition.

When Jack got his ewe she was a yearling. His father realized that a sheep gets old very quickly and gave the lad a young ewe. During the next four years she raised six lambs, which were sold each fall and the money put in the bank so that Jack, from his sheep, started his first bank account. At this time the flock got its first set-back through the ravages of dogs. One night in the early spring just before the lambs were commencing to arrive stray dogs from the neighboring village attacked the flock in the yard and it so happened that Jack's ewe was amongst those killed. Six ewes in all were lying dead in the yard the next morning and the flock was ruined, as is usually the case when dogs molest sheep. They were sold out and a new flock purchased to take their place. Once thoroughly frightened by dogs a flock rarely comes back to good breeding form. In the new flock Jack was given another yearling ewe to take the place of the one he lost. Years went on with the grades. Prices of mutton and wool were low. The unwashed wool brought about ten cents per pound one year with another and the lambs, in the late fall and the early winter, fattened up on oats and turnips and with good clover hay after a fall on second-growth clover and rape, sold at from four to five dollars a hundred weight. The flock of forty ewes averaged about fifty lambs for sale each year, but at the price of wool and of the lamb and mutton the returns were not large. However, while others gradually went out of the business because of the low prices and the danger from dogs, Jack and his father kept on, partly because they both liked sheep and partly on account of the value the flock had in keeping down weeds, which was an important factor when labor grew scarcer and scarcer as the farm boys drifted to the growing cities. The time came, however, when it was evident that something had to be done in order to make the flock more profitable. It was late November and the lamb crop had been well fattened and was ready for sale. The local drover bought the lot at $4.00 per head, which left very little profit for the producer. Jack decided that it was time for a change and finally convinced his father that, with the experience they both had, they could handle a flock of pure-breds. It was accordingly agreed upon and the entire flock of grades was disposed of. By this time two breeds of sheep were taking the lead in Ontario as far as numbers were concerned, namely Shropshires among the medium wool breeds and Leicesters among the long wool. Both Jack and his father had always favored the Shropshire and deemed it advisable that a start be made with pure-breds of this breed. Although both had had considerable experience with sheep only a small flock was purchased in the beginning. The grade ewes had been disposed of at $7.00 per head and in their place was put a small flock of only six pure-breds at $17.00 per head, which semed to be sufficient margin between the price of grades and pure-breds to warrant the change in breeding. Twenty years ago, $17.00 was considered a fairly large price for good pure-bred Shropshire ewes.

Disappointments Always Come

THE new flock proved disappointing for a time. The lamb crop did not average one lamb per ewe and the chances for sale with only a small number of ram lambs to offer were small. However, there was little trouble in disposing of the ram lambs for from $10.00 to $12.00 per head in the place of the $4.00 or $5.00 as had been the case with the grades. After a few years Jack took over the entire flock and the sheep business gradually improved until it was no trouble to get from $15.00 to $25.00 per head for good lambs in the fall. The flock is still being carried on the same farm and is turning in to its owner from $1,000 to $1,500 each year. Wool is selling from five to six times as high as it did when Jack began with one ewe. Lamb and mutton is averaging from three to four times as much per pound. Good pure-breds sell at about three times as much as they did in those days. True, feed is higher in price, but the sheep on the farm are maintained during the summer on grass and clover pasture and through the fall on a few acres of rape sown in drills about thirty inches apart at the rate of a pound and one-half per acre, and throughout the winter on clover hay, pulped turnips and a very little grain. The ration is a roughage ration. The cost is not as great as with a class of stock which requires an abundance of concentrates.

There are a few points to be emphasized from Jack's experience. It would be well to stress first the importance of getting the farm boy interested in some class of farm stock. Sheep are well suited to this purpose. Giving the boy one or two sheep of his own and allowing him to have the profits from the same will stimulate his interest in sheep breeding. The start should be made with good grades and eventually, when the time comes, the change to pure-breds may be made with less risk. Experience will teach that it pays to shear the sheep in late March or early April and to dip them in a good standard dip before they go on grass and again before they come into winter quarters in the fall. In his breeding work Jack found that the greatest financial returns invariably followed the use of the best pure-bred ram procurable. This still holds true, and as a general thing late March or early April is a good time to have the lambs dropped.

During the period of low prices and depressed con-

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There are at present over one hundred returned Canadian soldiers at the Manitoba Agricultural College receiving a six months' course in farming. Photo shows Professor Macmillan giving a party of the men a demonstration of the method of selecting breeding ewes.

Vagaries of Our Livestock Prices

The Goats Are Not All on One Side of the Fence

By JAMES E. POOLE

A CONDITION wholly unexpected has developed in livestock circles recently which may be accepted as a herald of summer and fall events. Quality, condition and weight in cattle are of secondary importance. A hog is a hog regardless of girth, heft or character and the more wool a sheep totes on its back the warmer is the reception it gets at the hands of killers. Hides, pelts, wool and by-products, no meat, are the determining factors. Such heavy cattle as were eligible to substantial premiums when packers were filling Government contracts have lost their footing, trade having reverted to a pre-war basis, restoring *popularity to the pony steer* and the yearling. Competition among feeders and between feeders and killers has maintained a high level on any kind of an animal of the bovine species fit to go on grass, and demand for hides and by-product has made the canner cow a favorite, while prime heavy bullocks were a drug. Common mixed hogs have sold at prices that made the product of choice barrows look absurdly cheap on the books and the premium paid for fleeces, even for pelts with an inch of wool, demonstrates how advantageously that commodity is selling.

The trend of May market events is susceptible of explanation. Cattle, outside a few specialties, declined $2 and 3 per cwt. while hogs held close to the high prices of the year and sheep followed the trend of cattle trade. This abnormal condition which put cattle and live muttons radically out of line with hogs was due to the fact that neither beef nor mutton is exportable, while all Europe was clamoring for hog products, especially lard into which the common hog is convertible. The slump in cattle, sheep and lambs was facilitated by gross profiteering by hotels, restaurants and retailers who persistently maintained war prices despite sharp depreciation in hoof and wholesale cost. During the slump cost to consumers was actually advanced, retailers charging profits of 50 to 75 per cent., while in the case of hotels and restaurants meat on the diner's table, cooked, cost $5 and as much as $6 per pound. Naturally this forced the consumer to protect by the only means available, curtailment of consumption, and as beef and mutton accumulated in packers' coolers, they hammered stock yard prices to reduce average cost and reimburse themselves, a means unavailable to the producer.

The Consumer Was the Goat

To make matters worse a flood of beef and mutton came unexpectedly from the trans-Missouri region. Texas had the first crop of fat grass cattle in three years. California, Colorado, Montana, Idaho, Wyoming and other Western states demonstrated development of a winter feeding industry that must be reckoned with hereafter and as the season worked along the fact became apparent that corn-belt feeders had shipped in more cattle than popularly supposed in anticipation of continuance of the war and with it high prices. Penalties resulting from this heavy production would have been mitigated if distributors had not plundered consumers in such rascally manner, but as usual in such emergencies the producer paid the toll.

Packers enjoyed comparative immunity as they were able to recoup themselves on hides, wool and by-product, the only salvation of the cattle feeder being as usual the hog.

Peering Into the Future

All this brings us down to the present, creating an opportunity to peer into the future. One fact has been abundantly demonstrated and it is that the meat eaters of North America cannot and will not buy the product of high-priced animals plus war cost of conversion and distribution. The logical result is penalization of the good steer and the prime lamb or sheep. Retailers are constantly clamoring for something cheap which forces the packer to rob the feed lot and pay excessively for common stuff of all kinds. During the war the heavy bullock with quality enjoyed an opportunity created by Government beef specifications, which were written on the theory that the best was none too good for the fighter, but the Government, even though paying big money, was not burdened with cost of distribution on a piratical basis. Since Washington backed out of the beef market steers selling at $17 to $20 per cwt. have been without a reliable demand, the result being a calamitous collapse so far as the feeder who had fattened them at war cost was concerned. A similar condition developed in live mutton trade, trash selling far out of line with quality especially if wearing a fleece.

It is not improbable that cattle values have been scaled down to a legitimate post-war basis, but in view of the attitude of the distributor prediction is impossible. Retail cost of all kinds of meats is outrageous, weaning the public away from beef, pork and mutton. Industrial conditions leave much to be desired and only the fact that a large element of the population has money to burn enables hotelmen, restaurateurs and retailers to perpetrate profiteering. Hogs have been selling about $5 per cwt. higher than cattle and live muttons, an unprecedented condition that could be described as unwarranted if Europe was less hungry for salt pork and fats. At this writing the visible supply of beef, fat hogs and lambs is commensurate with reduced consumptive demand owing to maintenance of war prices. Texas cattle will run until July 1, and corn-belt feeders must liquidate, meanwhile. Consequently the middle of that month will find the trade on a grass basis as there are no distillery cattle this year. Grassers will come early, *Montana having ordered cars for the second week of July* and as the proportion of heavy cattle in the Western beef crop will be small it is probable that they will get better action, present market conditions discouraging weight making. Light Western cattle are undoubtedly scheduled for a good market as the public can eat that kind of beef even after retailers have exacted their oppressive toll and that hides and by-products will sell high all summer is a certainty.

Light and Old Stuff Popular

Anything resembling a canning cow, a bull susceptible of conversion into sausage, or a light steer or heifer with a little grease on its ribs, will be popular at the market all summer, but the future of the long-fed steer is obscure. Late in May a Winnipeg man sent to Chicago a bunch of prime Shorthorn steers that cost $18.50 on that market and would have been worth $20, at Chicago a short time before. The best bid they could get at Chicago was $16.50, the incident being mutely eloquent of a situation not easily described, but in a general way it may be said that *for three months past the few $18 and $20 sales of fat cattle made in the Chicago market have been deceptive and made for the obvious purpose of deluding feeders on the one hand and giving retailers an argument on which to build up high prices on product.* On the same market session cattle identical in quality weight and condition have sold $1 per cwt. apart, and fluctuations of $1 and $1.50 per cwt. weekly have operated distinctly to the disadvantage of the producer.

Where the Goats Congregate

All this has created widespread dissatisfaction, prompting packers to solicit a conference for the ostensible purpose of stabilizing prices. Formalities incidental to organizing committees have been enacted but it is a safe prediction that the movement will not get feeders anywhere and that in all such periodical vicissitudes they will find themselves on the side of the line where the goats congregate. However, unless something can be done to remedy existing chaotic conditions, a discolored optic will be administered the whole livestock industry. At the moment the hog is riding on a wave of unprecedented prosperity, but that market could break $5 per cwt. should European demand wane as it eventually must and that high prices have stimulated pork production is admitted. Wool trade is riding on the crest of an unheralded post-war boom and will probably command good prices for several years, but the erratic manner in which sheep and lamb prices fluctuate is susceptible of no intelligent explanation. Nothing is more stable than the markets on which meat and animal by-products are sold and livestock producers are entitled to a reasonable degree of stability at the stock yards. Under present conditions fluctuations are determined largely by receipts at the primary markets.

The Pity Of It

Give packers access to 65,000 cattle in a week at Chicago and they hammer prices $1 per cwt., but if the succeeding week produces only 40,000 sharp advances are scored, although, at the end of the previous week, killers have asserted that beef coolers are full to the congestion stage, their actions on every short run discrediting assertions during previous plenitude. As goes Chicago, so every market in the country is regulated unless local congestion happens to afford opportunity for smaller raids.

Lack of purchasing methods is advanced as evidence that no collusion exists among packers. If we were in a combine, contend the Big Five, these fluctuations, which we are powerless to prevent, would be impossible, but rarely can the buyers of one concern be detected pursuing a radically different policy from the others except in the case of top cattle, a mysterious trade as one house will frequently make a specialty of these for several weeks, then passing the prodigal stunt to an ostensible competitor. What comes out of packingtown in the shape of logic, argument and explanation of market conditions is unvariably of the same tenor, as if it had been reduced to phonographic record condition, but the ear of the producer has gone deaf to this propaganda, if that term is permissible, and some more reasonable explanation is now demanded. Markets that fluctuate $1 to $1.50 per cwt. between the time cars are ordered to load livestock and the stuff is visualized by the buyer cannot be dignified by that term, and the industry cannot be maintained on a gambling basis.

Present prospects warrant good summer and fall markets for medium, light and common cattle, bovine trash of all kinds, also hogs, but the sheep and lamb outlook is dubious, despite the bullish influence of a healthy wool market. Retailers and other meat distributors cannot be cured of predatory habits in a moment and it is doubtful if the public will buy much beef cut from steers selling above $15 per cwt., but 900 to 1,050-lb. steers that did not get the benefit of war conditions will be wanted as they furnish a grade of beef the public can buy and yield good profits to both packer and distributor. The hog market will depend on European demand as if the major part of the product of American packing houses was thrown on the domestic market what has recently happened in cattle circles would be repeated. The whole country has raised the biggest lamb crop in its history and consumption of that meat is so restricted that a small excess exerts a paralyzing influence, danger of market paralysis subsequent to August existing.

At this writing packers are paying $13 to $15 per cwt., for the bulk of the steer cattle they are converting into beef, most of the cows and heifers selling at $10 to $13, with canning and cutting material at $6.50 to $8.50, prices that warrant much lower charges to consumers, especially when abnormally high values of hides and by-product are reckoned with. Hogs are selling anywhere from $20 to $21 and if the cattle market is a barometer are ripe for a break. Shorn lambs at $13.40 to $14.50 per cwt., spring lambs at $17.50 to $19 and shorn sheep at $10.50 to $11.50 tell the story of conditions in that trade briefly. When the fact is considered that production is still on a war basis the producer is not open even to a suspicion of profiteering.

A word about horses. Drafting trade is picking up, but the day of the medium chunk has passed. This kind of equine stock is superabundant, but *a dearth of drafters weighing* 1,600 *lbs. and up impends* and may become acute three or four years hence, owing to general curtailment of breeding operations consequent on low prices during the war, high cost of feed and apprehension that between tractors and motor trucks the drafter was doomed to the same commercial extinction as the carriage horse, the driver and the rider.

DEVELOPING THE MILK GLANDS

By W. M. Wood

THE milk gland is that organ which separates the milk from the blood. In normal circumstances we find four of these glands in the cow's udder. When we examine the udder of a cow that has been butchered we will find that the udder is first divided into two parts in a lengthwise direction, but further, that these two parts are each divided again in a cross direction into two parts. The whole udder is therefore divided into four absolutely separate parts or glands.

The milk glands of a new born calf are in the bull calf as well as in the heifer calf in an undeveloped state and they remain in this state until time of maturity. At maturity they begin to develop in the heifer whereas they stay at the same stage in the bull. This development goes on very rapidly as soon as the heifer has been bred and when the first calf comes the milk glands have reached already a certain stage of development, which stage, however, can be considerably further developed by the owner if he will act in time.

As soon as the first calf is born is when to begin the development of the milk glands of the young mother. The best stimulation will be obtained by letting the calf suck its mother during the first ten or fourteen days and milking the cow twice a day. After the calf is weaned the heifer should be milked three times a day for about ten days and afterward twice a day. If there is no opportunity to have the young cow sucked by her calf, milk her the first ten days five times a day and gradually decrease to twice.

The cow has four milk glands and their canals for conveyance of the milk are four teats. These four glands should be developed in an equal manner. To do this the milker should milk with both front teats and afterwards both hind teats and not cross or milk one teat at time as is usually done when milking a cow. No matter if one of the teats is earlier emptied than the other the milker should continue milking the empty teat at the same time. The milking should be done with the full hand and it is well to wet the teat with a little milk foam or grease it with a little vaseline. As soon as milking is finished however the teats should be wiped until they are thoroughly dry. If the milker will push the udder down after the milk flow has stopped he will find that this massage gives him new milk.

This matter of developing the milk glands of the heifer has received close attention on our farm for many years. It requires but little extra time and the result is always a better milk producer than she would otherwise be. One of our cows with her first calf gave by being milked three times a day on an average during twelve days after calving 14.8 pounds of milk a day, after having been milked five times a day during the next twelve days she gave on an average 26.6 pounds a day, which amount she produced for a long while after being milked twice a day, when the amount even went higher.

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars," etc.

CHAPTER XII—*Continued*

"DAD, I'll go you a hundred dollars in gold that I finish one—two—three."

Bostil threw back his head to laugh heartily. What a chip of the old block she was! "Child, there's some fast hosses that'll be back of the King. You'd be throwin' away money."

Blue fire shone in his daughter's eyes. She meant business, all right, and Bostil thrilled with pride in her.

"Dad, I'll bet you two hundred, even, that I beat the King!" she flashed.

"Wal, of all the nerve!" ejaculated Bostil. "No, I won't take you up. Reckon I never before turned down an even bet. Understand, Lucy, ridin' in the race is enough for you."

"All right, Dad," replied Lucy, obediently.

At that juncture Bostil suddenly shoved back his plate and turned his face to the open door. "Don't I hear a runnin' hoss?"

Aunt Jane stopped the noise she was making, and Lucy darted to the door. Then Bostil heard the sharp, rhythmic hoof-beats he recognized. They shortened to clatter and pound—then ceased somewhere out in front of the house.

"It's the King with Van up," said Lucy, from the door. "Dad, Van's jumped off—he's coming in . . . he's running. Something has happened. . . There are other horses coming—riders—Indians."

Bostil knew what was coming and prepared himself. Rapid footsteps sounded without.

"Hello, Miss Lucy! Where's Bostil?"

A lean, supple rider appeared before the door. It was Van, greatly excited.

"Come in, boy," said Bostil. "What're you flustered about?"

Van strode in, spurs jangling, cap in hand. "Boss, there's—a sixty-foot raise—in the river!" Van panted.

"Oh!" cried Lucy, wheeling toward her father.

"Wal, Van, I reckon I knowed thet," replied Bostil. "Mebbe I'm gettin' old, but I can still hear. . . Listen."

Lucy tiptoed to the door and turned her head sidewise and slowly bowed it till she stiffened. Outside were sounds of birds and horses and men, but when a lull came it quickly filled with a sullen, low boom.

"Highest flood we—ever seen," said Van.

"You've been down?" queried Bostil, sharply.

"Not to the river," replied Van. "I went as far as—where the gulch opens—on the bluff. There was a string of Navajos goin' down. An' some comin' up. I stayed there watchin' the flood, an' pretty soon Somers come up the trail with Blakesley an' Brack an' some riders. . . . An' Somers hollered out, 'The boat's gone!'"

"Gone!" exclaimed Bostil, his loud cry showing consternation.

"Oh, Dad! Oh, Van!" cried Lucy, with eyes wide and lips parted.

"Sure she's gone. An' the whole place down there—where the willows was and the sand-bar—it was deep under water."

"What will become of Creech's horses?" asked Lucy, breathlessly.

"My God! aint it a shame!" went on Bostil, and he could have laughed aloud at his hypocrisy. He felt Lucy's eyes riveted upon his face.

"Thet's what we all was sayin'," went on Van. "While we was watchin' the awful flood an' listenin' to the deep bum—bum—bum of rollin' rocks some one seen Creech an' two Piutes leadin' the hosses up thet trail where the slide was. We counted the hosses—nine. An' we saw the roan shine blue in the sunlight."

"Piutes with Creech!" exclaimed Bostil, the great gloom in his eyes lighting. "By all thet's lucky! Mebbe them Indians can climb the hosses out of thet hole an' find water an' grass enough."

SYNOPSIS

LIN SLONE, a wild-horse hunter, trails a magnificent, wild, red stallion — which he names Wildfire — for several months, from the Utah ranges across the Grand Canon of the Colorado. At last, when almost starving, he ropes the horse, but is thrown and hurt.

On the south side of the Grand Canon is a settlement called Bostil's Ford. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. He is very jealous of Creech, another rancher, who also owns some splendid horses. The annual races are soon to take place, and Bostil fears that his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. It is now June, but Bostil has ignored all Creech's messages for the boat. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has often sworn revenge. Cordts, a horse-thief, has also threatened to carry her off.

One day Lucy, riding alone in the desert, finds Slone lying helpless and renders him assistance. The next day she brings him food and clothes, but, at his request, says nothing about him at the Ford. Wildfire takes a fancy to Lucy and Slone agrees to let her ride him in the races. She comes in secret every day to train Wildfire, and just before the race-day Slone declares his love for her. Bostil cuts the boat adrift. The next morning the river is in flood, and Creech's horses cannot be brought across.

Lucy tells her father she is sure of winning the race.

"Mebbe," replied Van, doubtfully. "Sure them Piutes could if there's a chance. But there aint any grass"

"It won't take much grass travelin' by night."

"So lots of the boys say. But, the Navajos they shook their heads. An' Farlane an' Holley, why, they jest held up their hands."

"With them Indians Creech has a chance to get his hosses out," declared Bostil. He was sure of his sincerity, but he was not certain that his sincerity was not the birth of a strange, sudden hope. And then he was able to meet the eyes of his daughter. That was his supreme test.

"Oh, Dad, why, why didn't you hurry Creech's horses over?" said Lucy, with her tears falling.

Something tight within Bostil's breast seemed to ease and lessen. "Why didn't I? . . . Wal, Lucy, I reckon I wasn't in no hurry to oblige Creech. I'm sorry now."

"It won't be so terrible if he doesn't lose his horses," murmured Lucy.

"Where's young Joel Creech?" asked Bostil.

"He stayed on this side last night," replied Van. "Fact is, Joel's the one who first knew the flood was on. Some one said he said he slept in the canon last night. Anyway, he's ravin' crazy now. An' if he doesn't do harm to someone or hisself I'll miss my guess."

"A-huh!" grunted Bostil. "Right you are."

"Dad, can't anything be done to help Creech now?" appealed Lucy, going close to her father.

Bostil put his arm around her and felt immeasurably relieved to have the golden head press close to his shoulder. "Child, we can't fly acrost the river. Now don't you cry about Creech's hosses. They ain't starved yet. It's hard luck. But mebbe it'll turn out so Creech 'll lose only the race. An', Lucy, it was a dead sure bet he'd have lost thet anyway."

Bostil fondled his daughter a moment, the first time in many a day, and then he turned to his rider at the door. "Van, how's the King?"

"Wild to run, Bostil, jest plumb wild. There won't be any hoss with the ghost of a show to-morrow."

Lucy raised her drooping head. "Is *that* so, Van Sickle? . . Listen here. If you and Sage King don't get more wild running to-morrow than you ever had I'll never ride again!" With this retort Lucy left the room.

Van stared at the door and then at Bostil. "What'd I say, Bostil?" he asked, plaintively. "I'm always rilin' her."

"Cheer up, Van. You didn't say much. Lucy is fiery these days. She's got a hoss somewhere an' she's goin' to ride him in the race. She offered to bet on him—against the King! It certainly beat me all hollow. But see here, Van. I've a hunch there's a dark hoss goin' to show up in this race. So don't underrate Lucy an' her mount, whatever he is. She calls him Wildfire. Ever see him?"

"I sure haven't. Fact is, I haven't seen Lucy for days an' days. As for the hunch you gave, I'll say I was figurin' Lucy for some real race. Bostil, she doesn't *make* a hoss run. He'll run jest to please her. An' Lucy's lighter 'n a feather. Why, Bostil, if she happened to ride out there on Blue Roan or some other hoss as fast I'd—I'd jest wilt."

Bostil uttered a laugh full of pride in his daughter. "Wal, she won't show up on Blue Roan," he replied, with grim gruffness. "Thet's sure as death. . . . Come on out now. I want a look at the King."

Bostil went into the village. All day long he was so busy with a thousand and one things referred to him, put on him, undertaken by him, that he had no time to think. Back in his mind, however, there was a burden of which he was vaguely conscious all the time. He worked late into the night and slept late the next morning.

Never in his life had Bostil been gloomy or retrospective on the day of a race. In the press of matters he had only a word for Lucy, but that earned a saucy, dauntless look. He was glad when he was able to join the procession of villagers, visitors, and Indians moving out toward the sage.

The racecourse lay at the foot of the slope, and now the gray and purple sage was dotted with more horses and Indians, more moving things and colors, than Bostil had ever seen there before. It was a spectacle that stirred him. Many fires sent up blue columns of smoke from before the hastily built brush huts where the Indians cooked and ate. Blankets shone bright in the sun; burros grazed and brayed; horses whistled piercingly across the slope; Indians lolled before the huts or talked in groups, sitting and lounging on their ponies; down in the valley, here and there, were Indians racing, and others were chasing the wiry mustangs. Beyond this gay and colorful spectacle stretched the valley, merging into the desert marked so strikingly and beautifully by the monuments.

Bostil was among the last to ride down to the high bench that overlooked the home end of the racecourse. He calculated that there were a thousand Indians and whites congregated at that point, which was the best vantage-ground to see the finish of a race. And the occasion of his arrival, for all the gaiety, was one of dignity and importance. If Bostil reveled in anything it was in an hour like this. His liberality made this event a great race-day. The thoroughbreds were all there, blanketed, in charge of watchful riders. In the centre of the brow of this long bench lay a huge, flat rock which had been Bostil's seat in the watching of many a race. Here were assembled his neighbors and visitors actively interested in the races, and also the important Indians of both tribes, all waiting for him.

As Bostil dismounted, throwing the bridle to a rider, he saw a face that suddenly froze the thrilling delight of

the moment. A tall, gaunt man with cavernous black eyes and huge, drooping black moustache fronted him and seemed waiting. Cordts! Bostil had forgotten. Instinctively Bostil stood on guard. For years he had prepared himself for the moment when he would come face to face with the noted horse-thief.

"Bostil, how are you?" said Cordts. He appeared pleasant, and certainly grateful for being permitted to come there. From his left hand hung a belt containing two heavy guns.

"Hello, Cordts," replied Bostil, slowly unbending. Then he met the other's proffered hand.

"I've bet heavy on the King," said Cordts.

For the moment there could have been no other way to Bostil's good graces, and this remark made the gruff old rider's hard face relax.

"Wal, I was hopin' you'd back some other hoss, so I could take your money," replied Bostil.

Cordts held out the belt and guns to Bostil. "I want to enjoy this race," he said, with a smile that somehow hinted of the years he had packed those guns day and night.

"Cordts, I don't want to take your guns," replied Bostil, bluntly. "I've taken your word an' that's enough."

"Thanks, Bostil. All the same, as I'm your guest I won't pack them," returned Cordts, and he hung the belt on the horn of Bostil's saddle. "Some of my men are with me. They were all right till they got outside of Brackton's whisky. But now I won't answer for them."

"Wal, you're square to say thet," replied Bostil. "An' I'll run this race an' answer for everybody."

Bostil recognized Hutchinson and Dick Sears, but the other of Cordts' gang he did not know. They were a hard-looking lot. Hutchinson was a spare, stoop-shouldered, red-faced, squinty-eyed rider, branded all over with the marks of a bad man. And Dick Sears looked notoriety. He was a little knot of muscle, short and bow-legged, rough in appearence as cactus. He wore a ragged slouch-hat pulled low down. His face and stubby beard were dust-colored, and his eyes seemed sullen, watchful. He made Bostil think of a dusty, scaly, hard, desert rattlesnake. Bostil eyed this right-hand man of Cordts and certainly felt no fear of him, though Sears had the fame of swift and deadly skill with a gun. Bostil felt that he was neither afraid nor loath to face Sears in a gun-play, and he gazed at the little horse-thief in a manner that no one could mistake. Sears was not drunk, neither was he wholly free from the unsteadiness caused by the bottle. Assuredly he had no fear of Bostil and eyed him insolently. Bostil turned away to the group of his riders and friends, and he asked for his daughter.

"Lucy's over there," said Farlane, pointing to a merry crowd.

Bostil waved a hand to her, and Lucy, evidently mistaking his action, came forward, leading one of her ponies. She wore a gray blouse with a red scarf, and a skirt over overalls and boots. She looked pale, but she was smiling, and there was a dark gleam of excitement in her blue eyes. She did not have on her sombrero. She wore her hair in a braid, and had a red band tight above her forehead. Bostil took her in all at a glance. She meant business and she looked dangerous. Bostil knew once she slipped out of that skirt she could ride with any rider there. He saw that she had become the centre toward which all eyes shifted. It pleased him. She was his, like her mother, and as beautiful and thoroughbred as any rider could wish his daughter.

"Lucy, where's your hoss?" he asked, curiously.

"Never you mind, Dad. I'll be there at the finish," she replied.

"Red's your color for to-day, then?" he questioned, as he put a big hand on the bright-banded head.

She nodded archly.

"Lucy, I never thought you'd flaunt red in your old Dad's face. Red, when the color of the King is like the sage out yonder. You've gone back on the King."

"No, Dad, I never was for Sage King, else I wouldn't wear red to-day."

"Child, you sure mean to run this race—the big one?"

"Sure and certain."

"Wal, the only bitter drop in my cup to-day will be seein' you get beat. But if you run second, I'll give you a present thet 'll make the purse look sick."

Even the Indian chiefs were smiling. Old Horse, the Navajo, beamed benignly upon this daughter of the friend of the Indians. Silver, his brother chieftain, nodded as if he understood Bostil's pride and regret. Some of the young riders showed their hearts in their eyes. Farlane tried to look mysterious, to pretend he was in Lucy's confidence.

"Lucy, if you are really goin' to race I'll withdraw my hoss so you can win," said Wetherby, gallantly.

Bostil's sonorous laugh rolled down the slope.

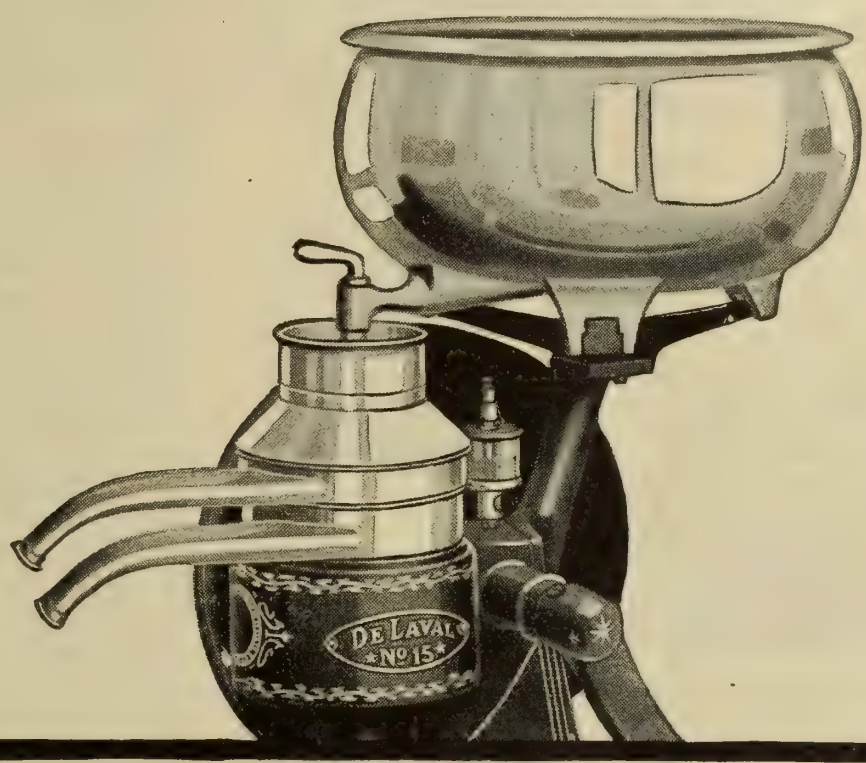
"Miss Lucy, I sure hate to run a hoss against yours," said old Cal Blinn. Then Colson, Sticks, Burthwait, the other principals, paid laughing compliments to the bright-haired girl.

Bostil enjoyed this hugely until he caught the strange intensity of regard in the cavernous eyes of Cordts. That gave him a shock. Cordts had long wanted this girl as much probably as he wanted Sage King. There were dark and terrible stories that stained the name of Cordts. Bostil regretted his impulse in granting the horse-thief permission to attend the races. Sight of Lucy's fair, sweet face might inflame this Cordts—this Kentuckian who had boasted of his love of horses and women. Behind Cordts hung the little dust-colored Sears, like a coiled snake, ready to strike. Bostil felt stir in him a long-dormant fire—a stealing along his veins, a passion he hated.

"Lucy, go back to the women till you're ready to come out on your hoss," he said. "An' mind you, be careful to-day!"

He gave her a meaning glance, which she understood perfectly, he saw, and then he turned to start the day's sport.

The Indian races run in twos and threes, and on up to a number that crowded the racecourse; the betting and yelling and running; the wild and plunging mustangs; the heat and dust and pounding of hoofs; the excited betting; the surprise and defeats and victories; the trial tests of the principals, jealously keeping off to themselves in the sage; the endless moving, colorful procession, gaudy and swift and thrill-



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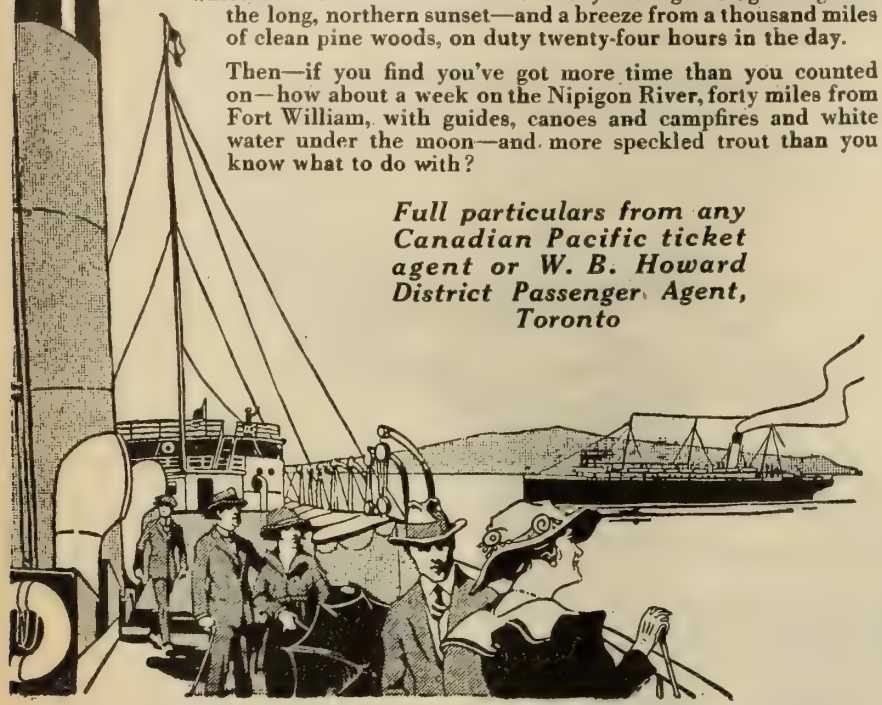

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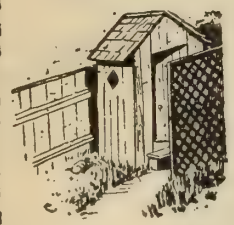

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ing—all these Bostil loved tremendously.

But they were as nothing to what they gradually worked up to—the climax— the great race.

It was afternoon when all was ready for this race, and the sage was bright gray in the westering sun. Everybody was resting, waiting. The tense quiet of the riders seemed to settle upon the whole assemblage. Only the thoroughbreds were restless. They quivered and stamped and tossed their small, fine heads. They knew what was going to happen. They wanted to run. Blacks, bays, and whites were the predominating colors; and the horses and mustangs were alike in those points of race and speed and spirit that proclaimed them thoroughbreds.

Bostil himself took the covering off his favorite. Sage King was on edge. He stood out strikingly in contrast with the other horses. His sage-gray body was as sleek and shiny as satin. He had been trained to the hour. He tossed his head as he champed the bit, and every moment his muscles rippled under his fine skin. Proud, mettlesome, beautiful!

Sage King was the favorite in the betting, the Indians, who were ardent gamblers, plunging heavily on him.

Bostil saddled the horse and was long at the task. Van stood waching. He was pale and nervous. Bostil saw this.

"Van," he said, "it's your race."

The rider reached a quick hand for bridle and horn, and when his foot touched the stirrup Sage King was in the air. He came down, springy—quick, graceful, and then he pranced into line with the other horses.

Bostil waved his hand. Then the troop of riders and racers headed for the starting-point, two miles up the valley. Macomber and Blinn, with a rider and a Navajo, were up there as the official starters of the day.

Bostil's eyes glistened. He put a friendly hand on Cordts' shoulder, an action which showed the stress of the moment. Most of the men crowded around Bostil. Sears and Hutchinson hung close to Cordts. And Holley, keeping near his employer, had keen eyes for other things than horses.

Suddenly he touched Bostil and pointed down the slope. "There's Lucy," he said. "She ridin' out to join the bunch."

"Lucy! Where? I'd forgotten my girl! . . . Where?"

"There," repeated Holley, and he pointed. Others of the group spoke up, having seen Lucy riding down.

"She's on a red hoss," said one.

"'Pears all-fired big to me—her hoss," said another. "Who's got a glass?"

Bostil had the only field-glass there and he was using it. Across the round, magnified field of vision moved a giant red horse, his mane waving like a flame. Lucy rode him. They were moving from a jumble of broken rocks a mile down the slope. She had kept her horse hidden there. Bostil felt an added stir in his pulse-beat. Certainly he had never seen a horse like this one. But the distance was long, the glass not perfect; he could not trust his sight. Suddenly that sight dimmed.

"Holley, I can't make out nothin'," he complained. "Take the glass. Give me a line on Lucy's mount."

"Boss, I don't need the glass to see that she's up on a *hoss*," replied Holley, as he took the glass. He leveled it, adjusted it to his eyes, and then looked long Bostil grew impatient. Lucy was rapidly overhauling the troop of racers on her way to the post. Nothing ever hurried or excited Holley.

"Wal, can't you see any better 'n me?" queried Bostil, eagerly.

"Come on, Holl, give us a tip before she gits to the post," spoke up a rider.

Cordts showed intense eagerness, and all the group were excited. Lucy's advent, on an unknown horse that even her father could not disparage, was the last and unexpected addition to the suspense. They all knew that if the horse was fast Lucy would be dangerous.

Holley at last spoke: "She's up on a wild stallion. He's red, like fire. He's mighty big—strong. Looks as if he didn't want to go near the bunch. Lord! what action! . . . Bostil, I'd say—a great hoss!"

There was a moment's intense silence in the group round Bostil. Holley was never known to mistake a horse or to be extravagant in judgment or praise.

"A wild stallion!" echoed Bostil. "A-huh! An' she calls him Wildfire. Where 'd she get him? . . . Gimme thet glass."

But all that Bostil could make out was a blur. His eyes were wet. He realized now that his first sight of Lucy on the strange horse had been clear and strong, and it was that which had dimmed his eyes.

"Holley, you use the glass—an' tell me what comes off," said Bostil, as he wiped his eyes with his scarf. He was relieved to find that his sight was clearing. "My God! if I couldn't see this finish!"

Then everybody watched the close, dark mass of horses and riders down the the valley. And all waited for Holley to speak. "They're linin' up," began the rider. "Havin' some muss, too, it 'pears. . . . Bostil, thet red hoss is raisin' hell! He wants to fight. There! he's up in the air. . . Boys, he's a devil—a hoss-killer like all them wild stallions. . . . He's plungin' at the King—strikin'! There! Lucy's got him down. She's handlin' him. . . Now they've got the King on the other side. That's better. But Lucy's hoss won't stand. Anyway, it's a runnin' start. . . Van's got the best position. Foxy Van!. . He'll be leadin' before the rest know the race is on. . . Them Indian mustangs are behavin' scandalous. Guess the red stallion scared 'em. Now they're all lined up back of the post. . . Ah! gun-smoke! They move. . . It looks like a go."

Then Holley was silent, strained in watching. So were all the watchers silent. Bostil saw far down the valley a moving, dark line of horses.

"They're off! They're off!" called Holley, thrillingly.

Bostil uttered a deep and booming yell, which rose above the shouts of the men round him and was heard even in the din of Indian cries. Then as quickly as the yells had risen they ceased.

Holley stood up on the rock with leveled glass.

"Mac's dropped the flag. It's a sure go. Now! . . . Van's out there front—inside. The King's got his stride. Boss, the King's stretchin' out! . . . Look! Look! see thet red hoss leap! . . . Bostil, he's runnin' down the King! I knowed it. He's like lightnin'. He's pushin' the King over—off the course! See him plunge! Lord! Lucy can't pull him! She goes up—down—tossed—but she sticks like a burr. Good, Lucy! Hang on! . . . My God, Bostil, the King's thrown! He's down! . . . He comes up, off the course. The others flash by. . . Van's out of the race! . . . An', Bostil—an', gentlemen, there aint anythin' more to this race but a red hoss!"

Bostil's heart gave a great leap and then seemed to stand still. He was half cold, half hot.

What a horrible, sickening disappointment! Bostil rolled out a cursing query. Holley's answer was short and sharp. The King was out! Bostil raved. He could not see. He could not believe. After all the weeks of preparation, of excitement, of suspense—only this! There was no race. The King was out! The thing did not seem possible. A thousand thoughts flitted through Bostil's mind. Rage, impotent rage, possessed him. He cursed Van, he swore he would kill that red stallion. And someone shook him hard. Someone's incisive words cut into his thick, throbbing ears: "Luck of the game! The King aint beat! He's only out!"

Then the rider's habit of mind asserted itself and Bostil began to recover. For the King to fall was hard luck. But he had not lost the race! Anguish and pride battled for mastery over him. Even if the King were out it was a Bostil who would win the great race.

"He aint beat!" muttered Bostil. "It aint fair! He's run off the track by a wild stallion!"

His dimmed sight grew clear and sharp. And with a gasp he saw the moving, dark line take shape as horses. A bright horse was in the lead. Brighter and larger he grew. Swiftly and more

swiftly he came on. The bright color changed to red. Bostil heard Holley calling and Cordts calling—and other voices, but he did not distinguish what was said. The line of horses began to bob, to bunch. The race looked close, despite what Holley had said. The Indians were beginning to lean forward, here and there, uttering a short, sharp yell. Everything within Bostil grew together in one great, throbbing, tingling mass. His rider's eye, keen once more, caught a gleam of gold above the red, and that gold was Lucy's hair. Bostil forgot the King.

Then Holley bawled into his ear, "They're half-way!"

The race was beautiful. Bostil strained his eyes. He gloried in what he saw—Lucy low over the neck of that red stallion. He could see plainer now. They were coming closer. How swiftly! What a splendid race! But it was too swift—it would not last. The Indians began to yell, drowning the hoarse shouts of the riders. Out of the tail of his eye Bostil saw Cordts and Sears and Hutchinson. They were acting like crazy men. Strange that horse-thieves should care! The million thrills within Bostil coalesced into one great shudder of rapture. He grew wet with sweat. His stentorian voice took up the call for Lucy to win.

"Three-quarters!" bawled Holley into Bostil's ear. "An' Lucy's give thet wild hoss free rein! Look, Bostil! You never in your life seen a horse run like thet!"

Bostil never had. His heart swelled. Something shook him. Was that his girl—that tight little gray burr half hidden in the huge stallion's flaming mane? The distance had been close between Lucy and the bunched riders.

But it lengthened. How it widened! That flame of a horse was running away from the others. And now they were close—coming into the home-stretch. A deafening roar from the onlookers engulfed all other sounds. A straining, stamping, arm-flinging horde surrounded Bostil.

Bostil saw Lucy's golden hair whipping out from the flame-streaked mane. And then he could only see that red brute of a horse. Wildfire before the wind! Bostil thought of the leaping prairie flame, storm-driven.

On came the red stallion—on—on! What a tremendous stride! What a marvelous recovery! What ease! What savage action!

He flashed past, low, pointed, long, going faster every magnificent stride—winner by a dozen lengths.

CHAPTER XIII

WILDFIRE ran on down the valley far beyond the yelling crowd lined along the slope. Bostil was deaf to the throng; he watched the stallion till Lucy forced him to stop and turn.

Then Bostil whirled to see where Van was with the King. Most of the crowd surged down to surround the racers, and the yells gave way to the buzz of many voices. Some of the ranchers and riders remained near Bostil, all apparently talking at once. Bostil gathered that Holley's Whitefoot had run second, and the Navajo's mustang third. It was Holley himself who verified what Bostil had heard. The old rider's hawk eyes were warm with delight.

"Boss, he run second!" Holley kept repeating.

Bostil had the heart to shake hands with Holley and say he was glad, when it was on his lips to blurt out there had been no race. Then Bostil's nerves tingled at sight of Van trotting the King up the course toward the slope. Bostil watched with searching eyes. Sage King did not appear to be injured. Van rode straight up the slope and leaped off. He was white and shaking.

The King's glossy hide was dirty with dust and bits of cactus and brush. He was not even hot. There did not appear to be a bruise or mark on him. He whinnied and rubbed his face against Bostil, and then, flinching, he swept up his head, ears high. Both fear and fire shone in his eyes.

"Wal, Van, get it out of your system," said Bostil, kindly. He was a harder loser before a race was run than after he had lost it.

"Thet red hoss run in on the King before the start an' scared the race out of him," replied Van, swiftly. "We had a hunch, you know, but at thet Lucy's hoss was a surprise. I'll say, sir, thet Lucy rode her wild hoss an' handled him. Twice she pulled him off the King. He meant to kill the King! . . . . Ask any of the boys. . . . We got started. I took the lead, sir. The King was in the lead. I never looked back until I heard Lucy scream. She couldn't pull Wildfire. He was rushin' the King—meant to kill him. An' Sage King wanted to fight. If I could only have kept him runnin'! Thet would have been a race! . . . . But Wildfire got in closer and closer. He crowded us. He bit at the King's flank an' shoulder an' neck. Lucy pulled till I yelled she'd throw the hoss an' kill us both. Then Wildfire jumped for us. Runnin' an' strikin' with both feet at once! Bostil, thet hoss 's hell! Then he hit us an' down we went. I had a bad spill. But the King's not hurt and thet's a blessed wonder."

"No race, Van! It was hard luck. Take him home," said Bostil.

Van's story of the accident vindicated Bostil's doubts. A new horse had appeared on the scene, wild and swift and grand, but Sage King was still unbeaten in a fair race. There would come a reckoning, Bostil grimly muttered. Who owned this Wildfire?

Holley might as well have read his mind. "Reckon this feller rid'n up will take down the prize money," remarked Holley, and he pointed to a man who rode a huge, shaggy, black horse and was leading Lucy's pony.

"A-huh!" exclaimed Bostil. "A strange rider."

"An' here comes Lucy coaxin' the stallion back," added Holley.

"A wild stallion never clear broke!" ejaculated Cordts.

All the men looked and all had some remark of praise for Lucy and her mount.

Bostil gazed with a strange, irresistible attraction. Never had he expected to live to see a wild stallion like this one, to say nothing of his daughter mounted on him, with the record of having put Sage King out of the race!

A thousand pairs of eyes watched Wildfire. He pranced out there beyond the crowd of men and horses. He did not want to come closer. Yet he did not seem to fight his rider. Lucy hung low over his neck, apparently exhausted, and she was patting him and caressing him. There were horses and Indians on each side of the racetrack, and between these lines Lucy appeared reluctant to come.

Bostil strode down and, waving and yelling for everybody to move back to the slope, he cleared the way and then stood out in front alone.

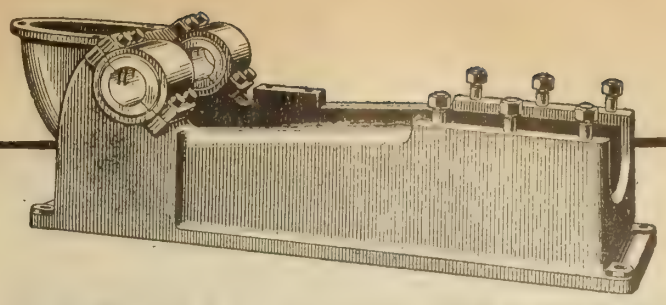
"Ride up, now," he called to Lucy.

It was then Bostil discovered that Lucy did not wear a spur and she had neither quirt nor whip. She turned Wildfire and he came prancing on, head and mane and tail erect. His action was beautiful, springy, and every few steps, as Lucy touched him, he jumped with marvelous ease and swiftness.

Bostil became all eyes. He did not see his daughter as she paraded the winner before the applauding throng. And Bostil recorded in his mind that which he would never forget—a wild stallion, with unbroken spirit; a giant of a horse, glistening red, with mane like dark-striped, wind-blown flame, all muscle, all grace, all power; a neck long and slender and arching to the small, savagely beautiful head; the jaws open, and the thin-skinned, pink-colored nostrils that proved the Arabian blood; the slanting shoulders and the deep, broad chest, the powerful legs and knees not too high nor too low, the symmetrical dark hoofs that rang on the little stones—all these marks so significant of speed and endurance. A stallion with a wonderful physical perfection that matched the savage, ruthless spirit of the desert killer of horses!

Lucy waved her hand, and the strange rider to whom Holley had called attention strode out of the crowd toward Wildfire.

Continued on page 24



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WHY DID WE LET TROTZKY GO?

Continued from page 15

every consideration—issued when it was known at Ottawa who Trotzky was. Even after he went through the form of the Brest-Litovsk Treaty, which took Russia out of the war, orders were given to Colonel Chambers, the Chief Censor, to forbid any but complimentary references in the Canadian Press to Trotzky and Lenine.

Notwithstanding all the statements to the contrary in the Toronto Trotzky press the Censor but once blue pencilled a word, a line, or an article of the many published in these columns and part of that was because it dealt unfavorably with Trotzky.

Trotzky agents here are appealing to the baser elements by showing the rich plums to be had by revolutionary methods. In scores of meetings across the continent audiences are being told that they, the proletariat, should rise and seize anything they want. As they have little they will lose nothing in the attempt. Stories of the big, fat, voluptuous opportunities that have come to their associates in Russia have been brought back to America, and have stirred the blood of the envious, until to-day over 8,000 organizers are at work urging Trotzky Revolution.

On the date set the people of the United States and Canada will, they expect, awaken in the morning to find all their possessions in the hand of members of the Revolutionary League—the homes, the shops, the factories, the farms, the banks, the women. The old foremen, superintendents, managers are to be removed and the organizers are to take their place and they must be implicitly obeyed. W. B. Wilson, a miner, for many years general secretary of the Miners' Trade Union of America, and now head of the Labor Bureau at Washington, in a recent speech to a gathering of waist workers in New York said:

"The Bolsheviki leaders consider only themselves. Their only purpose is to rule as the czars and emperors of Europe have done. They even go further than that, for they propose to set up an obligatory and compulsory form of living. Men are not to be allowed to leave their jobs, under certain conditions, even if they want to."

New York and Toronto are the chief Trotzky headquarters. One investigator, a Trade Unionist, who is fighting them strongly, told me they are using as much paper in one week in New York for disseminating their literature, as the leading daily in Canada uses in six months. At their depots a continuous stream, young persons chiefly, is passing in to purchase the literature, a set of which costs $7 to $10. In the States they had arranged to inaugurate the Revolution in Seattle, but the prompt action of Mayor Olsen stopped them. In New York a manifesto from Mayor Hylan checked their ardor and made the leaders think. Now the word is going from group to group that July 4 has been set for the Revolution in the States.

The Trotzky power showed in another development in Ottawa. The persistent propaganda campaign carried on by his agents, through his groups in Canada, to hamper our war efforts and bring on labor, returned soldiers, and similar troubles in Canada was exposed by our own Intelligence Departments, and U.S. officials were continually finding their trails leading to Canada quite as much as to Mexico. Things became so bad that the Dominion Cabinet appointed C. H. Cahan, K.C., to take over the whole problem from our Department of Justice. In a short time he uncovered such a serious state of affairs that once more the Trotzky influences got busy and Mr. Cahan was ordered to cease his inquiries and send in his resignation.

In thus exposing Trotzky and his influential friends in this country I am expressing no opposition to the aims of the Russian masses who rebelled against conditions. On the other hand, I, in common with all worth-while Canadians, were in general sympathy with them. As a matter of fact, Lenine and Trotzky had nothing whatever to do with the Russian Revolution. They neither inspired nor made it. When the Revolution was complete and the country was being reorganized to continue the war in conjunction with the Allies, these two men forced themselves on the Governing Committee and backed by ample money and aided by other German agents seized control. Nearly all of these agents were passed back to Russia via Canada. They were quickly placed in all the big strategic appointments. One group who sailed on a C.P.R. steamer from Vancouver had with them a large printing outfit. They confided to the sailors that the plant was to be used for printing Trotzky literature, and the entire outfit was soon after at the bottom of the Pacific. The sailors belonged to the British Union.

There was nothing new about the Trotzky grab in Russia. It is the old steam-roller method. It has been done hundreds of times in Canadian politics—the seizing of organizations and party conventions by the ward heelers to thwart the wishes of the people. But in all history there never was such a brilliant coup—the complete submission of a nation of 200,000,000 to two recently arrived enemy strangers. It was the cleverest of all the clever things the Germans did in the war. Though, as they look back on events, the Germans, whose greatest sufferings were since then, must now curse Trotzky as we do.

Trotzky, at all his earlier gatherings in Russia, was well known as a German. He never denied it. He was openly accused of being a German agent and spy. But he possesses such a marvellous capacity to control a mob that he quelled all opposition. Men who came to shoot remained to support him, which reminds one of Bourassa. The late Hon. J. I. Tarte, who himself well understood the platform art and the management of men, told me Mr. Bourassa was such a clever orator that he sometimes made him believe right was wrong.

The British Foreign Office was warned long in advance, but, anyone who knows ward politics in Canada or in the States knows how useless, if not dangerous, one of our dignified intellectuals, with the added gift of brilliant oratory, would be in handling questions where the opinions of the masses is concerned.

There is genuine unrest in Canada, as elsewhere, but it is a legitimate development, which will lead to a better world. It was here before the war. But in no country in the world was there less cause for discontent. The advantages and opportunities have nowhere been better. There is practically no hereditary wealth. The men of means, the men at the head of industries, nearly all came from the farm or the poor workman's cottage. They got there because they had a little more mental equipment, but mainly because they were willing to sacrifice many pleasures in their younger days, and to work longer hours than the less successful.

Trotzky's organizers are seeking to direct the unthinking masses of this discontent into their camp and through them to seize control here. Make Canada another Russia as it is to-day. They have ample funds. Experienced Trade Unionists are having no easy task combating the insidious propaganda. They, even the most radical of them, know what fakers the Bolshevist leaders are. But are they getting the support they should from employers, from managers, from superintendents? They are not. Too many of the latter are of narrow vision who resent any change in economic relations. In the past the trouble has been on the side of the Labor Unionist. He always regarded the employer as his national enemy—a profiteer. He refused to interest himself in the institution from which he drew his living. To-day he is demanding his share of the profits in his industry; more of the comforts of life, a voice in the control of the concern in which he is employed. Many of us welcome this development. It is what we have been wanting—the community spirit. Ignorance has kept employer and employee apart. The Unionist sees only his own section of work. Employers have not been successful in interesting him in their side—that is, the business as a whole.

The first step is to recognize *bona-fide* Trade Unions. Thirty-five years experience confirms my support of them. There are seven different unions with me here getting out this magazine. I have had many a fight with them—am likely to have more, but that has never changed my support of organized Unionism.

DAIRYING

Dehorning Calves

By W. H. UNDERWOOD

MY experience in dehorning cattle covers a period of many years. I have dehorned a large number of mature animals and a great many calves and the method of dehorning that I like best and the one that is easiest is that of killing the budding horn in the head of the calf. For a successful operation the calf ought to be less than three weeks old and certainly not more than a month old.

It does not make much difference whether caustic potash or caustic soda is used. Either will do the work successfully. They may be obtained from druggists in the form of sticks about the size and thickness of an ordinary lead pencil. I have never seen a calf dehorned in this manner suffer the slightest backset and the head is always smoother and neater in appearance when the horns are removed in calfhood than when permitted to grow for a year or more, then sawed or clipped off.

The actual work of killing the little horn bud is simple. I tie the calf up to a post or to a manger in the barn, tying the head so that the youngster cannot twist around and injure itself. I feel the calf's head for the little button under the skin that will finally develop into a horn if left alone. In the first three weeks of the life of the calf this button is not attached to the skull. I have seen some men remove these buttons with a keen-edged knife simply clipping them out from under the skin and applying an antiseptic salve to the wounds. This however is not as humane as the caustic method.

I clip the hair away from where the horns should be and locate the "buttons" by means of touch. I take a piece of leather about five or six inches square and cut a hole about three-fourths of an inch in diameter in the leather. Then I wrap a few thicknesses of paper around the caustic, adjust the hole in the leather guard directly over the horn "buttons" and apply the caustic. The leather keeps the caustic from corroding the flesh and skin around the horns.

It is useless to attempt to use the caustic treatment after the calf is a month old. Some of the most ill-shaped heads I have ever seen on cattle were the results of trying to remove the horns at two and three months old by the caustic method. All the effect it seems to have then is to distort the growth of the horny tissue, twisting it into grotesque shapes and in some cases starting a bony growth under the skin.

After the calves have been treated by caustic sticks they should be kept indoors for a week if the weather is at all wet. If they are allowed to get wet and there is any caustic clinging to the skin the caustic is apt to be washed down into the eyes and cause blindness.

SUNFLOWER SILAGE

A COUNTY agent in Lewis County, New York, gives his experiences with sunflowers in silage. The sunflowers were sown at the rate of twenty pounds to the acre with a two-row corn planter and were in by May 25, following the corn. The plantings were cultivated coincidentally with the corn, and where they grew best soon spread out and shaded the ground so that fewer cultivations than the corn should receive were possible without damage to the plants. They rapidly shot through the quack but were stunted where the mustard was rankest. Frost, in June, which killed beans, had no appreciable effect on the sunflowers other than to normally retard their growth. Another frost in August, which singed the corn badly, had no other result on the sunflowers than to stop the blossoming or heading which was then rapidly taking place. In a swale or cold air channel, where the wild mustard stunted the growth, the frost browned these up considerably. A killing frost on September 10, which took everything, struck the sunflowers so that on the following morning their heads were drooping badly. In a few days, however, the plants had straightened up and were apparently as good as ever, except for the lower leaves which were killed. The crop was harvested shortly after this, following the corn, with the ordinary corn harvester. The sunflowers were cut and blown into a separate silo by themselves. Neither the corn nor the sunflowers matured this season. The yield per acre, despite the comparatively poorer land, was 2¼ times that produced by the corn. The cost of the sunflower seed was approximately the same as the corn per acre. The Russian or single-headed type of sunflower was used.

HOLSTEIN RECIPROCITY

THE thirty-fourth annual meeting of the Holstein-Friesian Association of America will be held on June 4th at Philadelphia. Some interesting addresses are to be made at this gathering of the Holstein in the United States among which there will be an important one by Prof. E. V. McCollum on the Newer Knowledge of Nutrition. As Prof. McCollum is already well known to the dairy men of Canada through his research work along dairy lines there ought to be something at this meeting that would be of extreme interest to all dairymen. The president, Hon. D. D. Aitkin, Flint, Michigan, will make an address also that ought to reflect some of the good things that have taken place in brief during the past year.

This meeting also meets to confirm the action of the board of directors held at a meeting in Detroit on December 21st last, when it was decided to affiliate with the Holstein-Friesian Association of Canada. This reciprocity in legislation between the two countries has been hailed with considerable delight by the Holstein men of Canada and no doubt this meeting in Philadelphia will have some interest for Canadians. The points in this recognition of their records of registration are as follows:

(1) All Holstein-Friesian cattle entering the United States from Canada shall be registered in the Holstein-Friesian Herd-Book of America and all Holstein-Friesian cattle entering Canada from the United States shall be registered in the Holstein-Friesian Herd-Book of Canada on the strength of the official certificates of registry from the country of origin without the registration of ancestors.

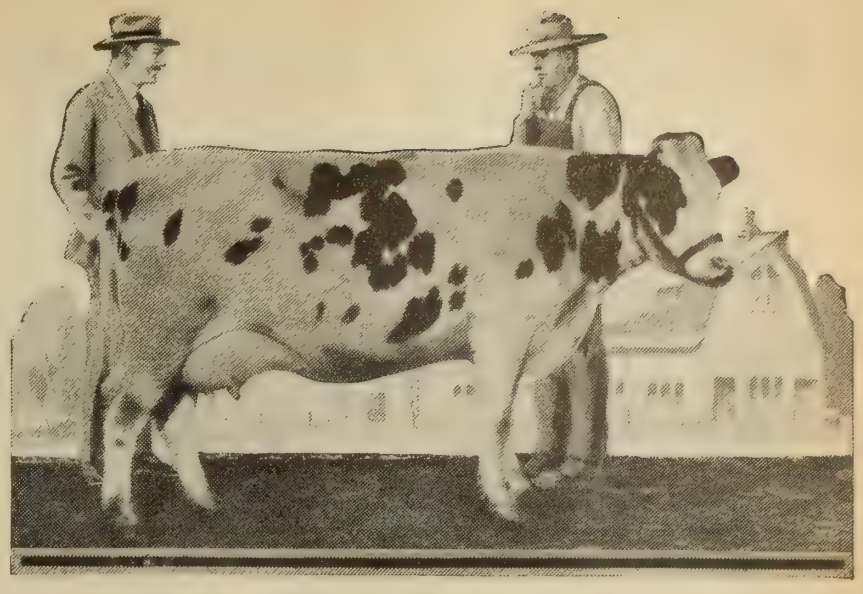
(2) Each animal from the United States shall be accompanied by the American certificate of registry, the American certificate of transfer to the Canadian buyer and a Canadian application for registry blanks showing the color markings, name and number of the animal, name and number of of the sire and dam, name of breeder and signature of the Canadian importer as owner.

Each animal from Canada shall be accompanied by the Canadian certificate of registry, the Canadian certificate of transfer to the American buyer and an American application for registry blank showing the color markings, name and number of the animal, name and number of the sire and dam, name of breeder and signature of the American importer as owner.

The signature of the breeder and the certificate of service of the dam shall not be required in either case.

(3) Both The Holstein-Friesian Association of America and The Holstein-Friesian Association of Canada shall charge their regular registration fees for the reregistration of such imported animals.

(4) In consideration of recognition by The Holstein-Friesian Association of America of the Certificates of registry of The Holstein-Friesian Association of Canada, the Canadian Association shall reduce the fee for import certificate required by the Canadian Customs Department to a nominal sum.



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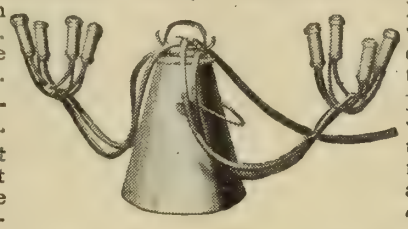

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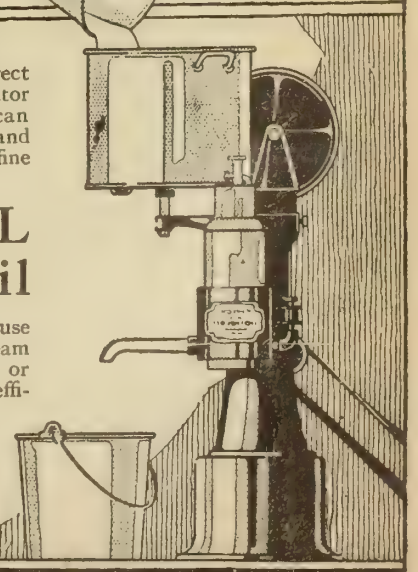

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WILDFIRE

Continued from page 21

Bostil's gaze took in the splendid build of this lithe rider, the clean-cut face, the dark eye. This fellow had a shiny, coiled lasso in hand. He advanced toward Wildfire. The stallion snorted and plunged. If ever Bostil saw hate expressed by a horse he saw it then. But he seemed to be tractable to the control of the girl. Bostil swiftly grasped the strange situation. Lucy had won the love of the savage stallion. That always had been the secret of her power. And she had hated Sage King because he alone had somehow taken a dislike to her. Horses were as queer as people, thought Bostil.

The rider walked straight up to the trembling Wildfire. When Wildfire plunged and reared up and up the rider leaped for the bridle and with an iron arm pulled the horse down. Wildfire tried again, almost lifting the rider, but a stinging cut from the lasso made him come to a stand. Plainly the rider held the mastery.

"Dad," called Lucy faintly.

Bostil went forward, close, while the rider held Wildfire. Lucy was as wan-faced as a flower by moonlight. Her eyes were dark with emotions, fear predominating. Then for Bostil the half of his heart that was human reasserted itself. Lucy was only a girl now, and weakening. Her fear, her pitiful little smile, as if she dared not hope for her father's approval yet could not help it, touched Bostil to the quick, and he opened his arms. Lucy slid down into them.

"Lucy, girl, you've won the King's race an' double-crossed your poor old dad!"

"Oh, Dad, I never knew—I never dreamed Wildfire— would jump the King," Lucy faltered. "I couldn't hold him. He was terrible. . . . It made me sick. . . . Daddy, tell me Van wasn't hurt—or the King!"

"The hoss 's all sight an' so's Van," replied Bostil. "Don't cry, Lucy. It was a fool trick you pulled off, but you did it great. By Gad! you sure was ridin' thet red devil. . . . An' say, it's all right with me!"

Lucy did not faint then, but she came near it. Bostil put her down and led her through the lines of admiring Indians and applauding riders, and left her with the women.

When he turned again he was in time to see the strange rider mount Wildfire. It was a swift and hazardous mount, the stallion being in the air. When he came down he tore the turf and sent it flying, and when he shot up again he was doubled in a red knot, bristling with fiery hair, a furious wild beast, mad to throw the rider. Bostil never heard as wild a scream uttered by a horse. Likewise he had never seen so incomparable a horseman as this stranger. Indians and riders alike thrilled at a sight which was after their own hearts. The rider had hooked his long spurs under the horse and now appeared a part of him. He could not be dislodged. This was not a bucking mustang, but a fierce, powerful, fighting stallion. No doubt, thought Bostil, this fight took place every time the rider mounted his horse. It was the sort of thing riders loved. Most of them would not own a horse that would not pitch. Bostil presently decided, however, that in the case of this red stallion no rider in his right senses would care for such a fight, simply because of the extraordinary strength, activity, and ferocity of the stallion.

The riders were all betting the horse would throw the stranger. And Bostil, seeing the gathering might of Wildfire's momentum, agreed with them. No horseman could stick on that horse. Suddenly Wildfire tripped in the sage, and went sprawling in the dust, throwing his rider ahead. Both man and beast were quick to rise, but the rider had a foot in the stirrup before Wildfire was under way. Then the horse plunged, ran free, came circling back, and slowly gave way to the rider's control. Those few moments of frenzied activity had brought out the foam and the sweat—Wildfire was wet. The rider pulled him in before Bostil and dismounted.

"Sometimes I ride him; then sometimes I don't," he said, with a smile.

Bostil held out his hand. He liked this rider. He would have liked the frank face, less hard than that of most riders, and the fine dark eyes, straight and steady, even if their possessor had not come with the open sesame to Bostil's regard—a grand, wild horse, and the nerve to ride him.

"Wal, you rode him longer'n any of us figgered," said Bostil, heartily shaking the man's hand. "I'm Bostil. Glad to meet you."

"My name's Slone—Lin Slone," replied the rider frankly. "I'm a wild-horse hunter an' hail from Utah."

"Utah? How'd you ever get over? Wal, you've got a grand hoss—an' you put a grand rider up on him in the race. . . . My girl Lucy—"

Bostil hesitated. His mind was running swiftly. Back of his thoughts gathered the desire and the determination to get possession of this horse Wildfire. He had forgotten what he might have said to this stranger under different circumstances. He looked keenly into Slone's face and saw no fear, no subterfuge. The young man was honest.

"Bostil, I chased this wild horse days an' weeks an' months, hundreds of miles—across the canon an' the river—"

"No!" interrupted Bostil, blankly.

"Yes. I'll tell you how later. . . Out here somewhere I caught Wildfire, broke him as much as he'll ever be broken. He played me out an' got away. Your girl rode along—saved my horse—an' saved my life, too. I was in bad shape for days. But I got well—an'—an' then she wanted me to let her run Wildfire in the big race. I couldn't refuse. . . An' it would have been a great race but for the unlucky accident to Sage King. I'm sorry, sir."

"Slone, it jarred me some, thet disappointment. But it's over," replied Bostil. "An' so thet's how Lucy found her hoss. She sure was mysterious. . . Wal, wal." Bostil became aware of others behind him. "Holley, shake hands with Slone, hoss-wrangler out of Utah. . . . You, too, Cal Blinn. . . An' Macomber—an' Wetherby, meet my friend here—young Slone . . . An', Cordts, shake hands with a feller thet owns a grand hoss!"

Bostil laughed as he introduced the horse-thief to Slone. The others laughed, too, even Cordts joining in. There was much of the old rider daredevil spirit left in Bostil, and it interested and amused him to see Cordts and Slone meet. Assuredly Slone had heard of the noted stealer of horses. The advantage was certainly on Cordts' side, for he was good-natured and pleasant while Slone stiffened, paling slightly as he faced about to acknowledge the introduction.

"Howdy, Slone," drawled Cordts, with hand outstretched. "I sure am glad to meet yuh. I'd like to trade the Sage King for this red stallion!"

A roar of laughter greeted this sally, all but Bostil and Slone joining in. The joke was on Bostil, and he showed it. Slone did not even smile.

"Howdy, Cordts," he replied. "I'm glad to meet you—so I'll know you when I see you again."

"Wal, we're all good fellers to-day," interposed Bostil. "An' now let's ride home an' eat. Slone, you come with me."

The group slowly mounted the slope where the horses waited. Macomber, Wetherby, Burthwait, Blinn—all Bostil's friends proffered their felicitations to the young rider, and all were evidently prepossessed with him.

The sun was low in the West; purple shades were blotting out the gold lights down the valley; the day of the great races was almost done. Indians were still scattered here and there in groups; others were turning out the mustangs; and the majority were riding and walking with the crowd toward the village.

Bostil observed that Cordts had hurried ahead of the group and now appeared to be saying something emphatic to Dick Sears and Hutchinson. Bostil heard Cordts curse. Probably he was arraigning the sullen Sears. Cordts had acted first rate—had lived up to his word, as Bostil thought he would do. Cordts and Hutchinson mounted their

horses and rode off, somewhat to the left of the scattered crowd. But Sears remained behind. Bostil thought this strange and put it down to the surliness of the fellow, who had lost on the races. Bostil, wishing Sears would get out of his sight, resolved never to make another blunder like inviting horse-thieves to a race.

All the horses except Wildfire stood in a bunch back on the bench. Sears appeared to be fussing with the straps on his saddle. And Bostil could not keep his glance from wandering back to gloat over Wildfire's savage grace and striking size.

Suddenly there came a halt in the conversation of the men, a curse in Holley's deep voice, a violent split in the group. Bostil wheeled to see Sears in a menacing position with two guns leveled low.

"Don't holler!" he called. "An' don't move!"

"What'n the h—l now, Sears?" demanded Bostil.

"I'll bore you if you move—that's what!" replied Sears. His eyes, bold, steely, with a glint that Bostil knew, vibrated as he held in sight all points before him. A vicious little sand rattlesnake about to strike!

"Holley, turn yer back!" ordered Sears.

The old rider, who stood foremost of the group, instantly obeyed, with hands up. He took no chances here, for he alone packed a gun. With swift steps Sears moved, pulled Holley's gun, flung it aside into the sage.

"Sears, it aint a hold-up!" expostulated Bostil. The act seemed too bold, too wild even for Dick Sears.

"Aint it?" scoffed Sears, malignantly. "Bostil, I was after the King. But I reckon I'll git the hoss thet beat him!"

To be continued.

ARKELL POINTS TO LIVESTOCK TRADE

Continued from page 13

Canada must take competition with Argentine and Australia and New Zealand. It must be remembered that during the war Canada has been asking twenty-five cents f.o.b. Montreal for her beef, while Argentine and Australia were only quoting 11¼c at their ocean points.

South America and South Africa, Australia and New Zealand have enough cattle to put us out of the business if we do not change our methods. They are able to continue for some time in the exporting business and to produce unlimited quantities. We have been facing a fictitious position during the war, both as regards the quality and the price; we have to face a different situation soon.

It is evident, therefore, that our price levels for beef cattle must recede. Can we produce in Canada steers at a cost to compete and justify us in increasing our production in Canada?

I am not strongly impressed with the outlet for our beef in the continental countries of Europe. These countries decline to import everything but the essentials to keep life. France says that there is no gold export for food products. Roumania must live on cereals. Greece is in good financial condition and so is Denmark and also Norway, but these are the only countries with which we can hope to have our normal business.

Europe has need for fats but her imports of beef will only be to bridge over the present trouble. Therefore they will import a certain number of feeding cattle to eat their grass, a certain number of breeding cattle in order to get their herds back to normal, while a few will want draft oxen.

As to the United Kingdom, the one ray of light is that labor conditions are changing, there has been a higher level of living, while it is clear that the maintenance of wages at a higher level will be one of the features, so that the consumption of meat will be greater than it has been in the past. These people will want the smaller cuts. And here is a chance to develop a trade that Australia and Argentine are not prepared to cater to.

In a word as to the whole cattle situation, sooner or later Canada will find herself in a very difficult position regarding the outlook for beef unless she develops new channels immediately for other outlets for her cattle. The export of livestock may change the situation.

The Outlook For Sheep

The outlook for sheep and lambs for breeding purposes in Great Britain is to our advantage. The price of wool may be expected to remain at a high level for some time.

In the matter of dairy cattle it is comparable to the outlet for beef cattle. Dairy cows and a few bred heifers are wanted at the present time. The dairy products, such as butter and cheese, will be in strong demand. The prices in butter have jumped in Canada of recent days—because of the world situation. You cannot buy butter in France at the present time. Cheese is in greater supply and prices are bound to be high for some time.

OBJECTS TO MOTOR LEAGUE

By C. A. W.

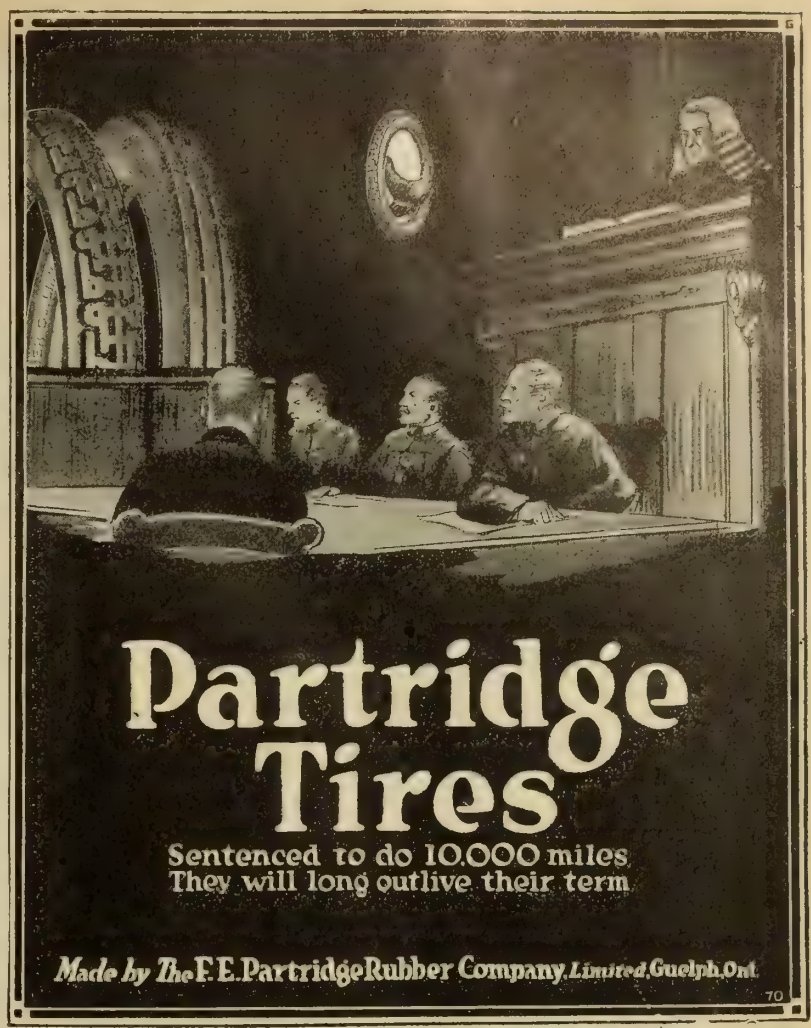
SUPPOSE the Motor League is feeling much better now since they have accomplished the desire to run as fast as they like, by getting the Ontario Legislature to make it legal to run 20 and 25 miles an hour. It legalizes them to kill the children, does it not? if they happen to get in the way on the street in cities and villages. I just see in the press where a 4½ year old boy was killed while running home. It will soon be hardly safe for children and old people to venture out on the street lest they are run down and injured or killed by autos running nearly as fast as a railway train. If a man with a horse and rig, were to drive down the street at 10 miles an hour, would he not be liable to arrest for fast driving? But Mr. So and So can come down twice as fast with an auto. Why? Because he has an auto. It is fashionable. You must get out of the way though you are afoot and supposed to have the right-of-way. It will be the same old story, "I was not going over 20 miles, the car skidded or got out of control."

Common sense tells one, you cannot stop so soon at 20 miles as you can at 10, and if the road is wet it is liable to slip more at the force of 20 miles than at 10.

The man with the auto wants to go fast. Every person likes to go fast to gratify his desire if he can. I have seen them go through the village and turn a corner at a speed that one could not get out of the way or stop in time. Now tell me what is the other man to do? You are not allowed to travel a railway track for fear you will get run over and killed. But an auto can go on the highway at as great a speed as plenty of trains, for I think there are plenty of trains which do not run over 25 miles an hour. Now sir, what do you expect a person to do? Take the law into his own hands and get into trouble for the benefit of the lawyers? I don't know what amount of lobbying the Motor League has to do or what it costs them, to get suc legislation passed, but I think it will soon be time for the other fellow to organize to get his rights and his safety protected.

Editor's Note:

We cannot get away from the fact that times are changing. Farmers' themselves own many cars now, and they know that a speed of fifteen or twenty miles an hour on a good uninterrupted road is nonsense. The best laws that could be passed would take off speed limits, but make the autoist fully responsible for all accidents, if such were workable. But considering the number of autos on our roads now, the accidents to pedestrians are few. We cannot, for one minute, allow the rights of the pedestrians and slower traffic to suffer in the least for the speeding tourist.



SALES AND WANTS

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5 cents a word---per insertion

Rates for Classified Ads.—Insertions in this column five cents per word per issue. Each initial, four or less figures in one number count as one word. Name and address is counted as part of the ad. All orders must be accompanied by cash. Forms for the issue close three days preceding each issue. Publication dates are 1st and 15th of the month.

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FARM ENGINEERING

Electric Power Costs to Farmer

By H. B. McKINNON

IN approaching—even on paper—the subject of Electrical Power for Agricultural Purposes one is apt to think at once of the factor of Cost,—cost of initial purchase, cost of complete installation and cost of maintenance. There is no doubt that it is this factor of cost that springs first to the minds of farmers who, perchance, are considering the advisability of securing more efficient power for their farm operations. In so far as Hydro-Electric power is concerned, however—and in spite of the prevalence and efficiency of other forms of "manufactured" electricity, "Hydro" is most in the thoughts of the people—the cost factor is, strangely enough, of secondary importance. The item of "Availability" is the crux of the situation.

Why should this be? Because, under prevailing conditions, even in the oldest-settled, most populous and progressive parts of Western Ontario, Hydro power is at a premium. It has advanced so far beyond the experiment—and demonstration—stage of 1912 (when to see a cream separator "run" by Hydro power was a day's wonder) that its utter efficiency has become a by-word. Its best agents, if one may speak of "agents" in connection with a public utility, are its satisfied users, and so practical is their publicity work on its behalf that the demand far exceeds the supply.

But, you object, surely there is unbounded "supply?" Is not the mighty force of a half-score of Ontario Niagaras ready to turn fanning mills and to light barnyards? Yes, but—not just yet. A Government department is on wheels that move more surely than speedily. This particular department is just a little bit like an agent for a super-five automobile, who has on his desk fifty cash orders and whose firm can't give him the cars for his customers. The "article" in this case is a good one and conditions for its production are not of the best. Labor of any kind is scarce, skilled technical help necessary for extension work cannot be secured, electrical supplies and equipment are at an enhanced figure because of war-time trade,—for these and other reasons, Hydro power, for the moment, is simply not available.

But, fortunately, this is purely a temporary state of affairs. As soon as something approaching normality is attained in the markets for material and labor, there will be such an extension of Hydro services in the rural field that a new day may dawn for thousands of farmers who to-day are doing long hours of heavy toil for a very moderate monetary return and a slightly smaller modicum of thanks.

Looking forward, then, to that time when the primary factor of to-day's situation will have vanished, and when once again cost and efficiency will be the governing co-efficients, it may be worth while to review briefly the conditions existing on some farms where Niagara power has been in use for some years.

It is essential that the reader understand, to begin with, the main features of the system, and these are best illustrated by reference to some particular locality,—let us say, Woodstock. In Woodstock will be found a sub-station, where the power coursing in the high-tension lines (which may be seen traversing the Province, carried on steel towers) is "stepped down" to a sufficiently low voltage for domestic application. Just as lines run from the sub-station to any street in Woodstock, so may they run out along any rural road divergent from the town. On this road, we shall suppose, live a dozen farmers, some of whom are anxious to make use of the power so easily procurable from the town sub-station.

Alternative schemes face them. Half a dozen may get together and form a "syndicate" — for electrical supply lends itself to co-operative effort just as much as egg-selling or boot-buying. The six men forming our syndicate probably decide to buy a powerful 20-H.P. plant, consisting of transformer wagon, motor wagon and, possibly, silo filler and thresher. The latter two may, on the other hand, already be in the possession of the individual farmer,—that is neither here nor there in so far as the power is concerned. The entire plant, whether of the two, three or four pieces, is portable, and would be given storage-room by one of the syndicate.

The writer has conversed with the members of four different syndicates in this Province and has actually witnessed operations in the case of three of them. Mr. Jonas Snider, whose farm is near the town of Waterloo, is a member of a six-partner syndicate obtaining power from that station. Purchased some five or six years ago, the complete outfit cost Mr. Snider and his partners 1,400 dollars; at this moment, *if procurable*, the same 20-H.P. plant would cost in the neighborhood of $2,000. For each farmer-owner, it does threshing, silo-filling and wood-sawing, and, if required, chopping of grain in big quantities. On such a syndicate the cost to each farmer, beyond the current cost of power utilized, is one-sixth of the initial purchase price, as upkeep cost is practically nil. Mr. Snider throws some light on the efficiency of the power when he says:

"I do all my heavy work with the syndicate outfit, including threshing and silo-filling. I have my own thresher, but we have the cutting box in common. I filled my silo, which is 12 x 42 feet, in one day, using just my own help, and no job could have been more satisfactory. Hydro power is away ahead of steam or gasoline; it is there always, and always at top speed."

"And what did your power cost you in one year?" I asked.

"Well, I'll give you last year's figures," was the reply. "We threshed for two and a half days, cut seven acres of corn and put it in the silo, chopped over 1,500 bushels of grain and sawed all the wood we use; lighted our entire house and barn, pumped water that supplied both of them, ran the washing machine and the cream separator, etc.,—all this for a total power bill of about seventy-nine dollars."

Another member of this syndicate, Mr. Abraham Snider, used the same outfit for all his heavy work and "wouldn't be without it for any money." When asked to express his opinion, Mr. Snider simply remarked as above, adding: "Apart from the great item of convenience, and the independence it gives in the matter of labor, electric power for farm work actually pays in dollars and cents."

In all the syndicates that have come under the observation of the writer, the co-operatively owned outfit does the work above described, the members arranging to have the plant in turn, and for a period of time necessarily determined by the nature of the work at hand. But the great majority of the "jobs" on all the two-score farms visited at one time or another do not depend on the portable outfit at all. Each

member has in his barn or house a small motor of one, two or five horsepower, which is connected with a transformer box on the local Hydro line, and which provides power for all ordinary day-by-day purposes. Such a motor is small, light and portable, and may be used exactly where it is most needed.

A 5-H.P. motor installation, complete, including cost of motor, costs, at the present time, approximately $270. A 1-H.P. single-phase motor, installed complete, would cost about $160.

The 5-H.P. motor in the basement of Abraham Snider's barn does all his chopping, and can be attached to oat crusher, pulper or fanning-mill. It provides barn lighting from the mow to the pig pens, a light or two in the barnyard and nearly 20 house lights. In the home, it runs the washing machine, wringer, electric toaster and electric iron. A similar 5-H.P. motor on the farm across the road pumps water from a 98-foot well, and supplies the system in the house and barn, while on the farm of Walter Snider it runs the milking machine in addition to its more common services. In the kitchen at the home of Mr. Frank Shuh, the writer saw the cream separator, churn and washing machine all working on a single shaft, each machine available at its required speed for the mere turning of a switch.

Most of the work above detailed is done on the farm of Mrs. T. Shantz, by a 1-H.P. motor, while one of similar capacity easily runs the separator and churn, and pumps water in the dairy house on "Summit Hill Farm," on the outskirts of the town of Kitchener.

The problem of "wiring" also brings up the item of cost. The influence of the war has been to considerably alter the situation in this respect, but *it may be laid down, generally, that a 20 per cent. increase on pre-war cost would cover in most instances.* Take the barn of Noah Weber, wired a few years ago, as an instance. This barn was wired with meter in barn and for two services (one for feed wire and one to the house for lighting), with 9 barn lights and 5 switches, and with 2½-inch service pipe, complete with service boxes, and the total cost, including the lamps, was $80; present-day cost, about $95. The barn of Mrs. Shantz, with similar services, but with 12 lights and 9 switches, was wired, complete with service pipe and lamps, for $110; present-day cost, about $130.

But, let us suppose that, on the farm line we are using for purposes of illustration, the farmers do not care to combine in a syndicate. Each wants to fill his own silo, do his own threshing and saw his own wood, in his own time and with his own power. In that case, each may instal a more powerful motor, say one of 10 H.P., which would be fed direct from the local power line. Such a motor is used by Mr. Thos. H. Dent, of Springbank Dairy Farm, near Woodstock, who is not in any syndicate. Mr. Dent has two silos, one a huge square one measuring 25 x 20 x 20 feet, and these he filled with his 10-H.P. motor and his own help. From the same source he obtains power for his chopper, while a 2-H.P. motor pumps water and runs the cream separator. Another non-syndicate farmer—to his great regret—is Mr. Ernest Hanmer, of Norwich. Mr. Hanmer has a 1-H.P. motor at present, which does the light work in house and barn and lights each, but he has purchased another of similar capacity to run his new milking machine. "Unfortunately, I am not on a syndicate, and have to arrange, myself, for my threshing and silo-filling," Mr. Hanmer said. "Labor is hard to get and becoming more so each day. I am going to buy still another motor, a 10-H.P. one this time, and then I can thresh and fill my silo in my own time. With electricity, a farmer can do his job, then quit,—which is more than be done without it. I am a great believer in the syndicate scheme and just wish I could be in one here."

It may be added that the "syndicate scheme," to use Mr. Hanmer's words, is the one that is most favorably viewed, by the Hydro-Electric experts, as the ideal system for the application of their power to farm life and industry.

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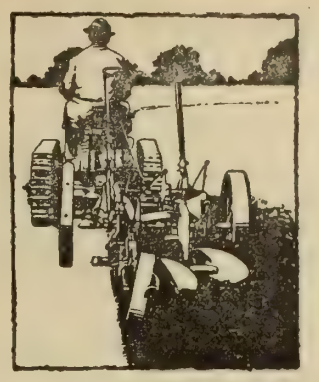

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Get that waste land to work, too. The track-laying Cletrac is the right tractor for work over rough ground. Climbs hillsides where horses can't pull a plow. Plows heavy muck land and soft ground *where other tractors stall.* The Cletrac lays a broad, safe, light track for itself.

Every month in the year you'll find profitable uses for your Cletrac. Small, light, *travelling over plowed ground without packing it,* operating on kerosene—the Cletrac is the tractor of greatest usefulness—12 h.p. on the draw-bar, 20 h.p. on the belt pulley.

Learn more about the Cletrac tank-type Tractor. Phone or write the Cletrac dealer near you. Write us for our book "Our Owners Say" showing the Cletrac helping other farmers make money.

Ontario Experimental Farm, Ottawa, Ont.

Gentlemen,—I take pleasure in stating that the work done by you with the Cletrac Tractor recently, on the Experimental Farm, Ottawa, was entirely satisfactory either on plowing, discing or on belt work.

I might put particular emphasis on the satisfaction it gave in driving a No. 3 Massey Harris Blizzard Blower in filling one of our Silos; the power delivered was very even and the motor handled the work apparently with very little effort. *(Signed) D. D. GRAY, Farm Superintendent.*

The Cleveland Tractor Co. of Canada, Limited, Windsor, Ontario

Cletrac

TANK-TYPE TRACTOR

Saved Thousands of Hay Crops

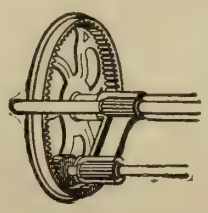
We can tell by letters from hundreds of enthusiastic farmers all over Canada who use the

FROST & WOOD MOWER

that thousands of hay crops have been saved because the Frost & Wood Mower, with its superior, life-long efficiency was on the job, tackling any kind of crop, "down" or standing and on the roughest kind of ground, and always ready for good work.

As soon as the wheels move the Knives start cutting

Light, but immensely strong, high carbon steel—and high grade roller bearings at every friction point give the famous F. and W. light draft. Convenient and easily operated levers give quick control—the knives go on cutting when bar is raised to clear an obstruction, saving time and crop.



FROST & WOOD "INTERNAL DRIVE" MEANS GREAT EFFICIENCY

See the little cut at the left—it shows a splendid F. and W. feature. Here is where the power is taken to operate the knives—a small wheel or pinion revolves on the inside of the power wheel, the cogs on each travel in the same direction, no tendency to fly apart, loosen or snap off—means quicker-acting power and longer life.

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Would not each of them benefit, like you do, by reading FARMERS' MAGAZINE? Could not our Free Service save them many dollars in the course of a year? Would you not be conferring an actual benefit upon them by getting them to subscribe to "Canada's National Farm Magazine ?" And at the same time it will pay you, right now, to do so!

Obtain two new subscribers for us, at the regular rate of $1.50 each a year, and we will mark your own subscription as paid ahead for another year from the time it expires.

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The Why of Unemployment

Continued from page 8

Their elimination would make for an increased satisfaction among the Canadian born people of this country who do not wish to be deprived of their birthright by disgruntled aliens, said aliens having received more of the material advantages of this country though coming in at the eleventh hour than many of those Canadians who have gallantly borne the burden and heat of the day.

It is time that these agitators were being handled without gloves.

SOME labor leaders are to-day seizing upon the fact that a few men are temporarily out of employment to support the plea for the formation of a dictatorship of the proletariat. It is agreed that the present system which they term capitalistic cannot continue because we are now face to face with over-production and unemployment. They reveal their ideas by proposing to send greetings to the Soviet Government of Russia and the Spartacans of Germany.

The result has been that some labor organizations have repudiated these actions and the more moderate element appears at present most influential. The expected has happened and the Bolshevik tendency of the less moderate laborites will no doubt receive a different slant from the more moderate element within the labor ranks.

But let us examine some of the statements repeatedly made by those who would upset our present system for the establishing of a dictatorship by the proletarist. The present system has been weighed and found wanting by these students of economics because to-day we are confronted by over-production and unemployment. For this they advocate a six-hour day. Because of this they claim that the capitalist system cannot continue.

Real Need of the Hour

Are we suffering from over-production? *To-day we suffer from under-production in at least five lines: Food, shelter, education, medical attention and amusement.* There may be other lines but that would be outside the premises of this article.

Few will doubt the statement that we are suffering from under-production in the matter of food. For the benefit of those who think that an extravagant statement let us recall the fact published in your valuable paper last June that there were 300,000 families in the city of New York too poor to afford to buy milk. The result of an investigation in the same city this last winter was published under the following headline: "Mal-nutrition of children, on account of the high cost of living."

Nor have we any reason to believe that New York is the only place so affected. But it is much more interesting to study such matters at a respectful distance. It is very unsettling to bring your investigation too near home.

We are suffering lamentably for lack of shelter. Almost every hamlet in the Dominion is seeking some relief through the federal housing scheme. The lack of shelter is of almost world-wide extent. Especially is this the case in urban centres. Some slight relief may be afforded on this point as far as this country is concerned by a movement to the rural districts. Yet the fact remains that some 350,000 houses are needed in England, some 450,000 in France and thousands in this country. Here, at least we are not confronted with over-production.

The educational qualification revealed by the members of the different armies has resulted, in some countries at least, in an awakening to our needs along this line. Witness the new education bills of England and the United States. The Minister of Education of one of the Western Provinces said in a recent address that out of the draft of three million in the United States, 750,000, or 25 per cent., were illiterate. We trust that this is an exaggeration. In that same address it was pointed out that many of the rural schools of that Province were closed. From these statements an idea can be formed of how much there is to do and how little done along this line.

And probably the greatest awakening that the last four years has given us is the need for some systematic medical attention. This is especially necessary in our rural schools. The splendid work inaugurated in the rural schools of Peel County last summer shows how large an untilled field we have here demanding our attention. The success of this work in Peel County set forth in your paper some time ago not only shows the possibilities along this line but will stand as a monument to the enthusiasm and enterprise of one of those who never knew the spectre of unemployment and whose loss we keenly feel.

And when we are better fed, sheltered, educated and developed physically than we now are we can spend considerably more of our time in amusement. When traveling in some rural districts you may notice, remote from any village, a field of permanent grass with goal posts evidencing circumstantially, at least, that this parcel of land has been dedicated to amusement. Possibly a miniature grandstand may confirm your suspicions. In purely rural districts these evidences of amusement are far too scarce at present.

When all these various things have been developed fully and a number more which may be now apparent to the more discerning have been exhausted we might talk of over-production. Then only and not till then may we complain of over-production without endangering our reputation for veracity. But with so much to do the time is surely inopportune to talk of a six-hour day. If labor is any better off in any other country of the world than in Canada we should like the place to be mentioned. If labor was ever better off in this country than at the present time we should like to be told when that time was. Horace Greeley wrote some time since that most people in America were born poor but pointed out that here few need remain so. That is probably more true to-day than when first written. Some temporary unemployment there may be at present. That is to be expected after the past strenuous and abnormal time. That it need be anything but temporary few people expect. If there is a surplus of labor in the centre of population it should flow to the rural districts which are not overcrowded.

Revenues From Agriculture

A year ago in Switzerland I attended my first reconstruction meeting. Since then these meetings to discuss reconstruction have become quite common. The subject under discussion at the meeting of interned officers and men in Switzerland was how to raise revenue after the war. Many novel means were suggested. The ideas seemed chiefly to centre around taxing people of various stations in life. My contribution on that occasion was in part as follows:

Many novel means have been suggested of raising revenue after the war but little attention has as yet been paid to the possibilities of our undeveloped resources. The agricultural resources of the United Kingdom even have not as yet been developed.

Ireland for instance in 1916 produced 76,000 acres of wheat compared with 559,000 acres sixty years previous. In the same time oats decreased in acreage from 1,980,000 acres to 1,071,000 acres. In barley the decrease was from 211,000 acres to 150,000 acres and in potatoes from 1,146,000 acres to 586,000 acres. During that time there had only been a very slight increase in the number of livestock kept in that country.

In France the increase in population

in the seventy-five years prior to 1909 was 20 per cent. The increase in wheat production in the same time was 74 per cent.

In Holland, Belgium and Denmark during the last thirty years the production of cereal grains per acre has increased until it now stands at 25 per cent. above the average for the United Kingdom. Denmark in forty years from 1871 to 1911 increased its production of cereals 40 per cent.; cattle 70 per cent.; potatoes 180 per cent.; and bacon 350 per cent.

Denmark learned the fact that Britain consumed much bacon and would pay good prices for it. Being a dairy country it had the dairy by-products so valuable in producing bacon. The Danes had not the necessary foundation stock for producing bacon hogs but knew where they could be found. Accordingly they went to Yorkshire, England, and imported their foundation stock. They did not know how to cure the bacon to suit the fastidious British market but imagined they could find someone who did. Hence they went to Wiltshire and procured men who understood bacon curing. The result is today the Danes annually export to Britain eight million pounds' worth of bacon. In 1913 Britain imported from Denmark eight and three-quarter million pounds' worth of bacon, two and one-quarter million pounds' worth of eggs, and ten and one-half million pounds' worth of butter. To-day students of agriculture from all parts of the world regard Denmark as the great exponent of co-operative production and distribution.

According to P. Anderson Graham, author of a book entitled "Reclaiming the Waste" there are in Great Britain and Wales ten and one-half million acres available for agricultural purposes now untilled. Christopher Turner points out in his book "The Land and the Empire" that in some of the recently formed small holdings farmers in Kent County, England, are making from £100 to £130 a year on five acres of land by producing vegetables, fruit, poultry and bacon, while a dairy farmer on 26 acres of land made a net income of £200.

Modest incomes these, yet there are smaller. From the *English Review*, November 1917, the following facts are procured: In 1913 in Dublin there were 16,000 heads of families whose incomes did not exceed 25 shillings per week, and 8,000 families whose entire incomes did not exceed 25 shillings a week.

With this ten and one-half million acres divided into small holdings similar to that of the dairy farmer mentioned and brought to the stage of productiveness that his farm has reached there would be farms where 400,000 families might increase their income by from 300 to 400 per cent. The revenue derived from this increased production would be enormous, for this would be producing something out of nothing or next to nothing. In doing this no one need be dispossessed.

These comparisons were applicable to the United Kingdom, but how much more applicable are they in this country with our sparse rural population, comparatively cheap land and virgin fertility? Here also we need a greater appreciation of the potentialities and capabilities of an acre of soil, under skillful management, a realization of our as yet undeveloped resources.

In a greater production of feed and shelter, more careful training and education, more medical supervision and more attention given to recreation, especially in the rural districts, there need be little unemployment for some time to come. Working along these simple and obvious lines will be reconstruction indeed. And the emphasis need not be all given to the first syllable of that hard-worked word. This will be real progress, procuring for posterity advantages that were to us denied.

It is argued by some whose view of the question is somewhat restricted that during the war with millions withdrawn from productive enterprise production was kept up. It was in some few lines such as munitions, food and clothing.

Continued on page 30

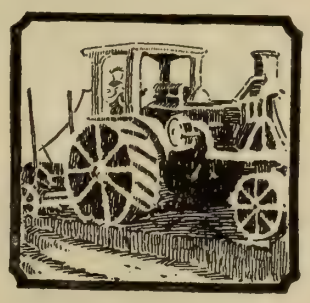
WOOL

Before shipping your wool write us for prices. We can pay you the highest possible prices as we have connections with the largest users of Canadian wool. However small your lot may be, drop us a line, and we will send you our list. We supply sacks, etc., and will give you prices F.O.B. shipping point, sending you cheque to cover immediately.

The Canadian Wool Co., Limited

103 Front Street West, Toronto

No less inside the house than out, every surface calls for protection. Daily use means daily wear upon the surface of everything used. Appreciate the principle of surface protection.



Agricultural machinery has to stand severe exposure. Their surface protection is absolutely indispensable if rust and corrosion are to be kept at bay. Rust cannot penetrate till the surface is broken. Save the surface and you save all.

Anything worth owning is worth preserving

GOOD money put into a home, a barn, a silo, or automobile needs protection as much as good money put into a bank

A wooden house is a wonderfully enduring thing if given reasonable protection. What is true of wooden houses is true of all things made of wood, be they in the city or country, be they stable or garage, wagon or desk.

And what is true of wood is true of other materials. Steel and iron from bridge and skyscraper to roof of shed—they last or they rust, depending upon whether or not they have surface protection.

If protected the surface is an impassable barrier to rust, rot, friction or disintegration. If unprotected it is an open door.

Whatever other good purpose paint and varnish may serve, in every case they save the service—their first and greatest service to property.

Your property is safe only when the surface is safe. The chief purpose of all paint and varnish is to save the surface so save all.

THIS ANNOUNCEMENT *is issued by the Canadian Save the Surface Campaign Committee, for the purpose of educating the public in the Preservative and Protective value of Paint, Varnish and Allied Products for the Conservation of Property, and has received the approval of the Canadian Trade Commission in the following words:*

"The realization of the above objects will lead to employment during the Reconstruction Period and bears our entire approval.
THE CANADIAN TRADE COMMISSION

Commissioner.

13

"SAVE THE SURFACE AND YOU SAVE ALL" *Paint & Varnish*

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A Tip Top Investment

Foresight is the greatest factor in saving yourself time, money and annoyance.

Don't continue sending good money after bad—by buying poor roofing to patch and repatch your old roofs. Invest in

PAROID
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NEPONSET ROOF

and obtain lasting satisfaction, durability and economy.

Once Neponset Paroid Roofing is laid it forms an ideal roof, either on new buildings or over old shingles. It can be put on quickly without litter or fuss. Costs half the price of shingles and pays for itself by wearing for years.

Neponset Paroid Roofing can be used on any building no matter how large or small. Its fire and weather-resisting properties give it first place among roofings.

Neponset Paroid Roofing is made in three colors, red, green and slate grey.

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A harness is as strong as the trace—no stronger. The trace takes the strain and the strongest trace is the best. The Hercules is a flat shaped trace, strong as steel, flexible as leather, tough and unbreakable, made of steel chain covered with heavy leather neatly finished in turned and rounded edges strongly stitched. Powerful heel chain and either clip or bolt piece at hame end; one and one-half inch solid leather billot. Does not chafe the horses and is tremendously satisfactory. If you don't have the Hercules Trace on your heavy harness, don't wait order a set NOW.

If your dealer does not have it, order from us direct. We will ship same day, on receipt of price.

$15 PER SET

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POULTRY

My Method of Grading

By TOM BARRON, in the "Poultry World," London

I AM going to give you a few practical hints on the interesting subject of the grading and selection of layers.

I have made my bit out of poultry farming, and I don't care if I don't make any more. I don't want any more, so I am perfectly satisfied with myself so far as I have gone.

There is one point I wish you to understand clearly; that is, I do not wish to depreciate the value of trap-nesting.

I have trapped thousands of birds in my time. By trap-nesting I mean the recording of birds, finding out how many eggs a bird will lay in one year, and only breeding from the birds which will produce a good profit over and above the cost of food.

I think, with my system of grading you can go into a pen of 50 birds, and by grading in the way I shall show you, pick out 45 of the very best birds in the pen, and discard the other five as of no use at all.

The best time for grading birds by the system which I am just going to show is when the fowls are about to lay. I don't say that you cannot grade them at any other time, but, in my opinion, this is the best time.

First of all I will talk about the head. I like a bird with a short head, but not too short, and not a long beak. The shorter the beak and the shorter the face, the better the head. I also like the wattles and comb of fine texture. They should be almost like silk, and the comb not too red. The eyes to project from the skull.

The Light-eyed Bird is the Best Layer

The Wyandotte has generally very dark, red eyes. I call them red, because you will understand better.

In nine cases out of ten a bird with light eyes is the best layer, provided the eyes are not too light. This has been my experience right through as regards the selection of layers. I like to see the eye very bold, standing right out from the socket, with a big black ball in the centre. The larger the black centre of the eye the better.

The neck should be rather fine, and I like a bird to be very wide across the wing bars and the back to be rather long. Another point of importance is that the space between the legs should be very wide when the hen is standing.

The greatest point of all in a layer is the distance the bird ought to be from the pelvic-bone to the breast-bone, and what distance there should be between the laying bones.

I will answer the laying-bone question first, as in my opinion it is pretty easy to answer.

The laying-bones of the fowl are the two bones right under the tail. These bones open and close according to the condition of the bird. If the bird is not laying these laying-bones will be quite close together.

If the bird is in laying condition and going to lay, these bones will be wide open.

The heaviness of these bones has a lot to do with laying capacity. In my opinion they should be as thin as possible, and the ends should not be covered with fat.

The next point is the breast-bone. The shorter the breast-bone the better the layer.

What should be the length?

I should say that a bird with a four-inch breast-bone was an exceptionally good layer. If you can get a bird 3½ in., 3¾ in. or 4 in. long in the breast-bone, you have a good bird.

I don't believe in 300-egg birds. If I can get a flock of birds laying 180 to 200 eggs a year, I want nothing better.

A point of great importance about layers is that the abdomen ought to be soft and pliable, but never hard.

Some people ask me what the distance between pelvic and breast-bone should be.

I never bother about inches. I simply take my fingers and put the little finger against the bottom end of the breast-bone and the top finger against the pelvic-bones of the bird. The greater the distance the better the layer.

With regard to the distance between the keel and the pelvic-bones of a cockerel. If you can get a cockerel 3 in. or 3½ in. you have one of the best breeders in the world. You can scarcely get one out of one thousand. If you should get one 2½ in. you have an exceptionally good bird.

I also like the bird to carry her tail rather high. That is always a notable point in all cases. I cannot tell you why, but it is a point I always look for in heavy layers.

There is another little point seen in the best layers, and that is that the yellow pigment in the legs goes practically white in Wyandottes and Leghorns. The better the layer the whiter the legs.

HOW TO TREAT GAPES

GAPES is a disease that frequently occurs in young chicks.

The cause of gapes is the presence of gape-worms in the windpipe.

As soon as a chick becomes affected, it will cough, sneeze, and gasp for breath.

A whole brood may be quickly infected by one chick.

If a few chicks are attacked, they can be cured by dipping the end of a feather in olive oil and pushing it down the windpipe.

Where a large number of chicks are infected, they should be confined to a coop for a short time, and by means of a powder-gun blow about a teaspoonful of Gape powder amongst every 25 to 30 chicks.

Gape powder can be obtained from Poultry Appliance Manufacturers.

TURKEY CHICKS

AT this time of the year turkey rearing may be carried out satisfactorily.

To be successful with turkey chicks, they must have good care and attention.

The chicks must be well protected from cold rains.

Feed well on a good mixture of biscuit meal and fine sharps.

In turkey rearing a good supply of green food is absolutely necessary.

THE WHY OF UNEMPLOYMENT

Continued from page 29

Other lines such as building were left at a standstill for almost the entire duration of the war, in many other countries to a greater extent than in this. The production of food and munitions was only kept up as well as it was by long hours, much overtime being put in and the overwork of women.

It is to be hoped and expected that we can make up the production dispensed with largely during the last four years and improve conditions for the future with less work exacted from women than there has been during that time. Also with less overtime expected from laborers in any and every field. But the most optimistic can scarcely expect these necessary objectives to be reached by the adoption of a six-hour day. The privileges we now enjoy were

not acquired by that method. Indeed we may be far removed yet from the Utopia pictured by some of our six-hour per day advocates. Happily there are some compensations. Happiness is rest from successful labor. Some of us if we were only allowed six hours work to keep us fit might even have less happiness than at present.

STANDARDIZING OUR FARM PRODUCTS

Continued from page 10.

Standardization of Wool

No better example of the value and benefits of standardization and co-operative organization can be cited than that of wool. For many years the farmers and wool growers sold to local dealers, often taking the worth of their clip out in trade. The dealer had every thing his own way, sometimes he even appeared to be giving extra good weight, but he usually got his stroke in when he sold the farmer his goods.

These dealers had practically no grades. Wool was wool and whatever they offered, the wool grower was compelled to accept.

Two years ago, the Ontario Sheep Breeders, under the guiding hand of R. W. Wade, of Toronto, undertook to handle wool co-operatively. They secured a warehouse in Guelph where the wool could be graded, by experts, sent out by the Government. The wool was then stored until sold.

The first year the company handled about three hundred thousand pounds. Last year they handled more than double the amount. Furthermore the quality and condition of the wool the second year was much better than that received during the first year.

The company has received a lot of criticism from competitors and even from some of the patrons. However, this is only natural. The most encouraging feature is the fact that the business is growing and the farmers are being educated in the proper ways of caring for, as well as shipping their wool. The system of grading each man's wool separately is fair and just. The man who carefully tends his flock, and raises a breed of sheep that grows a good quality of wool, is paid more than the man who allows his sheep to become infested with burrs, or cotted through lack of nourishment or disease. It comes right to the point that quality counts.

The Standardization of Apples

Apples are already standardized by the apple growers and fruit men. When it was first proposed to standardize this fruit a number of objections were raised. However, we find that the system has worked out satisfactorily both to the producer and consumer. The benefits derived from the standardization of apples are so numerous that only a few will be mentioned.

The producer or fruit grower who faithfully cultivates, manures, prunes, sprays, and thins out his fruit, and who keeps abreast of the times, both in methods of culture and marketing, will realize greater returns for the crop harvested, than the man who is slovenly in his methods; who allows his orchards to become depleted through lack of cultivation and leaves his crop open to the attacks of insect pests. Hence, we see that standardization encourages the energetic, up-to-date farmer. It spurs on to greater activity the man who otherwise would rest content, leaving the fruit crop to take care of itself. Nothing will drive a farmer into action quicker than to see his neighbor getting more money for a product than he himself has for sale. Furthermore, taking the broader viewpoint, it raises the standard of quality for the nation's crop. It sets a distinctive seal on Canadian fruit. It advertises the nation as a producer of high grade products.

In other classes of fruit grown by fruit men in Ontario, we find that owing

Continued on page 38

PEACE *and* Prosperity

Used by Permission of the National War-Savings Committee)

Food Production

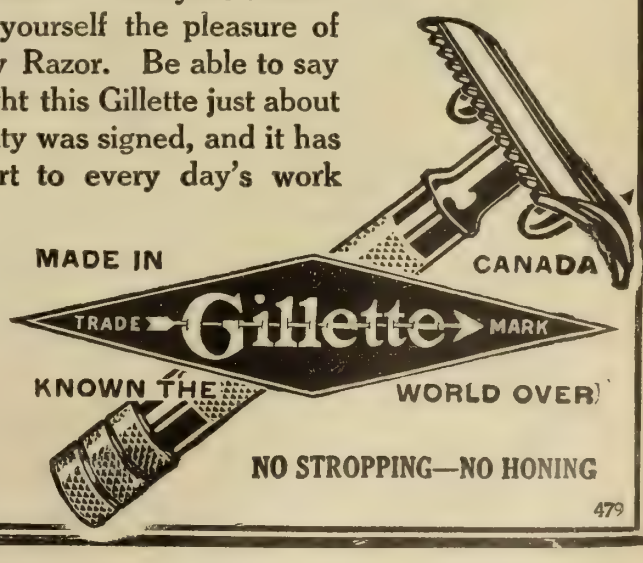
Of all industries, the production of food is the least affected by the return to Peace conditions.

The market for Food is still unlimited. Nations are crying out for the products of the farms. It is said that Bread is the only effective weapon against the spread of Bolshevism.

True, there is the labour problem, but there is every reason to expect that the return of hundreds of thousands of men from France will solve that.

So that, as one of Canada's food producers, your income is assured, and there is really no reason why you should deny yourself the pleasure of owning a Gillette Safety Razor. Be able to say 20 years hence, "I bought this Gillette just about the time the Peace Treaty was signed, and it has given me the right start to every day's work since then."

Sold by Hardware Dealers, Jewelers, and Druggists at $5.00. There is a set to suit you!



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MORTGAGE LIFTERS

Guild's Bred-to-lay Barred Plymouth Rocks, White Wyandottes, Single Comb White Leghorns, and Rose Comb Rhode Island Reds. 150,000 eggs for hatching at $2.50 per 15; $4.00 per 30; $6.00 per 60; $10.00 per 100; $80.00 per 1,000. Write for beautifully illustrated Catalogue, containing 65 photos, tonic and feed formulas. It's free.

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Gilson Mfg. Co., Limited
2615 York St., Guelph, Ontario

A Glad Surprise!

Daring Airmen Rescued from Watery Grave

Practically everybody in the civilized world experienced a sense of glad surprise when the news came recently of the rescue of those two daring aviators, Hawker and Grieve, who attempted the first non-stop flight of the Atlantic, after all hope had been abandoned.

Their great attempt, fraught with such terrible risk, and undertaken with such complete knowledge of the dangers to be faced, challenged the admiration of all. But, strange as it may seem, ordinary people who would not dream of even going up in an aeroplane to say nothing of trying to fly over the trackless ocean, face risks daily, which, while far from spectacular, are just as capable of a fatal termination.

There is, for instance, the risk that ensues from neglecting minor symptoms which point to coming stomach troubles. Of all the complex organs of the human system, the stomach most easily becomes deranged; and a chronically disordered stomach makes life a misery for its victim.

When you feel oppressed in spirits, with dull or sick headache, or suffer from nausea after eating; when your appetite is lost; when the food you force between unwilling lips becomes sour in the stomach and feels like a leaden weight—you are facing a dangerous risk.

The proper thing to do is to take Parmelee's Vegetable Pills which will quickly set things right in your digestive tract. They increase the flow of bile, give "tone" to the stomach and at the same time promote a gentle laxative action to free the lower bowel from a congestion of impurities.

Parmelee's Vegetable Pills are not an experiment. They have been prescribed successfully for many years and have invariably proved a boon to those suffering from digestive disorders. From one end of Canada to the other thousands of men and women testify to the worth of this fine old remedy. And in the family medicine chests of these grateful people you will always find a box of Parmelee's Vegetable Pills

They justly regard Parmelee's Vegetable Pills as the most reliable standard remedy that will restore disordered stomachs to good condition and keep them in that good condition, thus ensuring a cheerful disposition, energy, vigorous appetite for wholesome food, and full enjoyment of all life's many activities.

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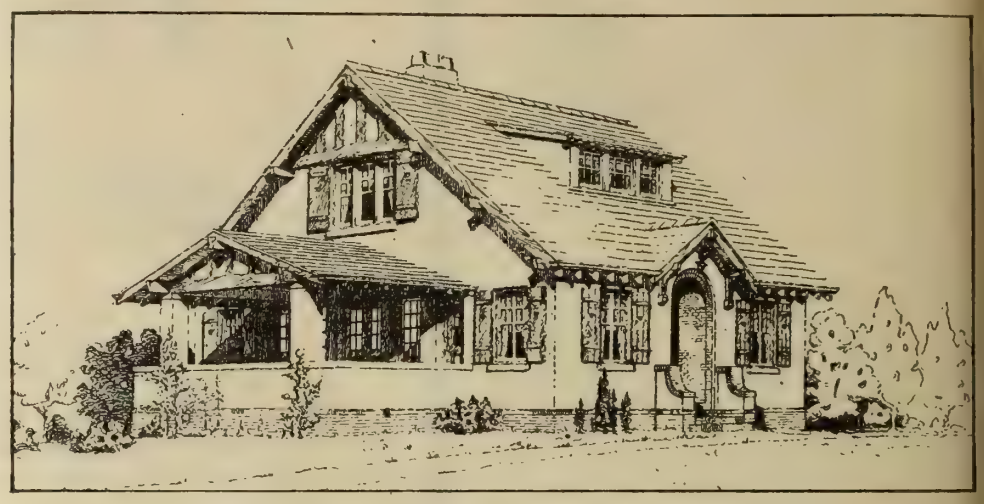
Belleville, Canada

BUILDING *and* CONSTRUCTION

The Roomy Farm Cottage House

By GENEVIEVE

TWO things a house must have if it is to be a real farm home; it must have an air of hospitality and permanence and comfort on the outside, and it must have the realities of these characteristics inside. The house shown here suggests hospitality in its broad front with the inviting little portico over the front door, and the unpretentious simplicity in every line; the broad, substantial make-up gives the impression that it has been built for several generations, and the low earth-hugging roof lines with the broad substantial porch and old-fashioned shuttered windows conveying the idea of snugness and shelter within.



A house that suggests hospitality, permanence and comfort.

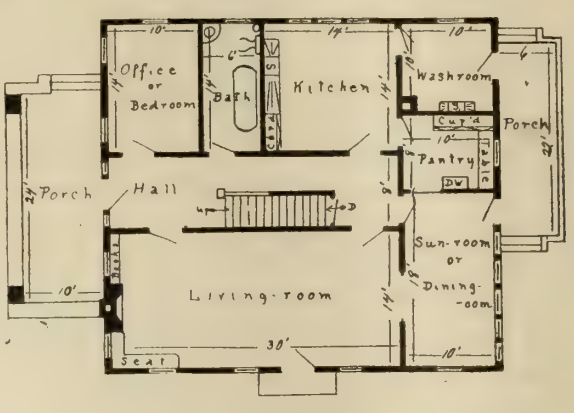
Two plans are given for a house of this type. In the first, a door at the front opens into a long living-room. This room may seem unnecessarily large in the plan, but when the house is built, the large cheerful living-room will be one of its charming features. A wide brick fireplace is built at one end with a bookcase on one side, and a corner seat on the other. At the other end of the room, are wide sliding doors opening into the sunroom. The sunroom is used as a dining-room, and being lighted from two sides it catches whatever sunlight there is in the morning or evening or in the dullest weather. In the summer it can be screened in, making almost an outdoor eating-place It opens to a side porch, which entrance will likely be used more than the front door.

On the other side of the house is the office as a guest-room or regular bed-room. This is the more convenient as the bathroom is on this floor. It is perhaps, better, in most houses, to have the bathroom upstairs, but the bathroom downstairs has the advantage that it may be easier to get sufficient water pressure, than if the water had to be elevated to the upper floor, and it is more convenient in a kitchen is a washroom for the men which can also be used as a laundry The chimney is placed where it can accommodate a stove in this room as well as the range in the kitchen. A old, second-hand cook-stove whose oven is no longer good will still do for boiling clothes. If a pulley clothes line is attached to the corner of the house here, the washing can be hung

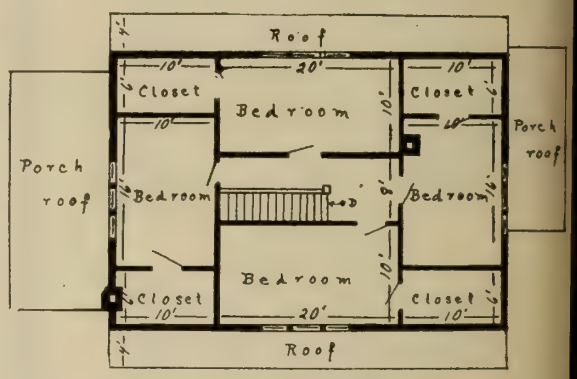
the large side porch, an ideal outdoor sitting-room in warm weather. Presuming that the drive is on this side of the house, the door here will be the main entrance, so we will have the hall with the stairway, and doors opening to the living-room and the office, the hall leading to the kitchen and the dining-room. In some homes it may be desirable to have a desk in a corner of the sunroom and to use home where there are little children.

The kitchen is a compact, convenient room, well lighted by a group of windows. The sink has a stacking shelf at the right and a drainboard and cupboard at the left, providing for the least possible unnecessary work in the process of dish washing. The position of the sink with relation to the bathroom gives a compact system of plumbing. At the other side of the

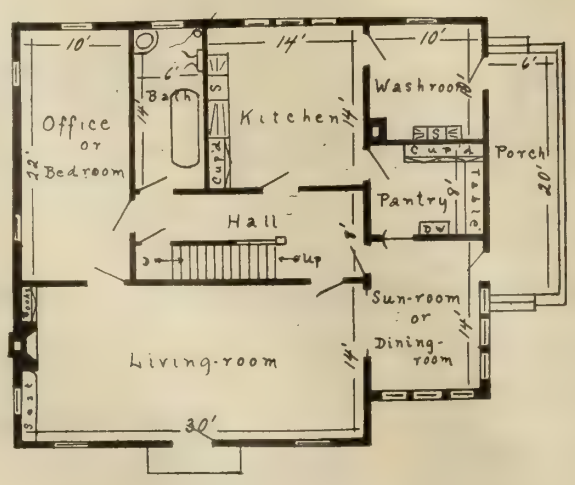
PLAN NO. 1



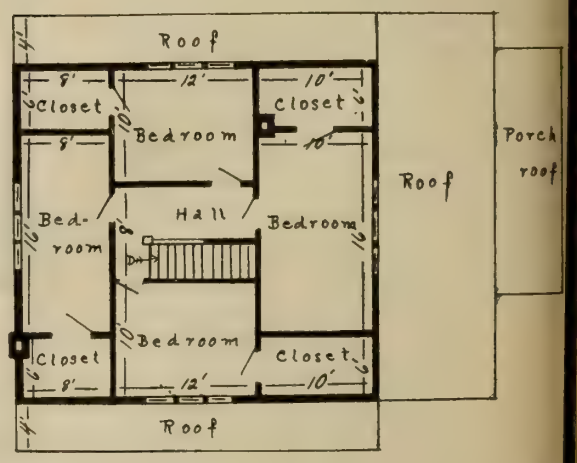
The ideas of hospitality, permanence and comfort are carried out inside, in the big cheerful living-room, the fireplace, the sunroom, and the modern conveniences and equipment for making the housework easier.



PLAN NO. 2



This plan shows a slight variation from the first in having no porch at the left side and no upstairs over the sunroom, pantry and washrom. The bedrooms upstairs are necessarily smaller.



out from the porch. The pantry with its built-up cupboard, dumb-waiter and work-table before the window, and placed almost between the kitchen and dining-room, is another practical addition to the housewife's working equipment.

The arrangement of the upstairs is very simple. After allowing four feet off the front and back where the the roof slopes low, the corners are partitioned off as clothes-rooms, leaving as much space as possible where the headroom is good for bedrooms. This gives four good-sized bedrooms.

The second plan is little different from the first with the exception that there is no side porch or side entrance at the left side, and no upstairs over the sunroom, pantry and washroom. The drawings of the layout explain themselves.

RURAL MAIL

TURKEYS AND GUINEAS

M. H., Ontario.—Where can I get some turkey eggs and young guineas?

Answer.—Turkeys are obtainable from many parties in the Province. Watch the advertising columns. Guineas are hard to get and we cannot recommend any particular place.

A LAME COW

G. C. B., Nova Scotia.—I have a cow which is slightly lame in one of her fore legs. After she calved in February her knee started to swell in front on top of the knee cap. She cannot walk now as it seems to pain all the time.

Answer.—Your cow has probably injured her knee when lying down on some irregularity of the floor of the stall. If this is the cause the swelling will be large, and softish to the touch, when the leg is partially flexed. Should the swelling be hard it will be due to rheumatism or some injury to the bone.

In the first case the treatment would be surgical, by putting a seton through it, or opening it up. However you might be able to alleviate the pain somewhat, and lessen the lameness, by bathing for at least thirty minutes, with good hot water several times daily, and giving a good rubbing with a mild liniment once daily.

In the second case the treatment would not be very satisfactory, but you would do good by rubbing a little red blister into it once daily for a few days, or until the skin gets sore, repeating the treatment after the skin has healed. You must avoid the part that contacts with the floor when the cow lies down. Do not put much blister on and rub it well into the skin, as the cow will be inclined to lick the part when the blister begins to act.

BUILDING QUESTIONS

J. I., Sask.—1. In constructing a furnace to heat several rooms with hot air, and taking cold air from outside or from both outside and inside, it seems to be a problem to find the proper size of cold air pipes. Please give rules for figuring this size.

2. When a farm house is surrounded by several out buildings and a lot of bluffs, which is considered more artistic; to have the out buildings painted the same color as the dwelling house or all of one different color, or each of a different color? A cottage of medium size on a farm where there are lots of bluffs and shrubs and trees, must for some reason have a green roof. What color is, as a rule, most appropriate for the body; all white, yellow with white trimmings, green with white trimmings, or white with yellow trimmings? No funny glaring colors are wanted, but something tasteful and serviceable.

Answer.—Regarding the size of furnace pipes, we are sending you an article "The Engineering of Furnace Heating" which should contain the information you want.

2. You would get a very pleasing effect by having your house and out-buildings painted in the same tones, provided a different color was used for roofs and trimmings to relieve the monotony. Your idea that a cottage set among trees should have a green roof is good, but have you ever seen a brick-red roof on a house among trees? It gives a very snug, homey appearance to a house and makes a bright spot on the landscape. Among the appropriate colors for painting a house in addition to white with the green trimmings and yellow with white trimmings, are a soft, very light grey with white trimmings, and a darker grey, green or red roof, or a brown body with white trimmings using enough white to overcome a possible sombreness.

IN AND AROUND THE DAIRY

By W. H. Underwood

An important item that is often overlooked in the management of dairy cows is providing them with plenty of salt. Unless cows receive plenty of salt they will cease to thrive and will therefore decrease in milk flow. Some dairymen mix the salt with the feed but the better plan is to provide a shallow box in which to keep the salt and keep it in a convenient place, where the cows may have ready access to the salt when they so desire.

We have what we consider a dandy plan for keeping the milk sheet in the barn. We made a little cupboard about two feet square for different remedies, etc., and hinged the door at the bottom instead of at the sides. Then we used two braces such as writing desks usually have to hold the door open but not let it fall down on the siding of the barn. On the inside we keep the milk sheet. It is handy always for writing and keeps the paper clean all the time.

Some cows switch their tails all through the year and it makes no difference to the person milking whether the cow is just keeping in practice for next year's flies or does it because of nervousness. He knows that the tail was built for swatting flies, not the side of his head. So I will describe a simple little device for putting a stop to this unpleasant form of massage. It is also better than a broken milk stool and blue air. Take a short piece of three-eighths inch iron rod and by heating and bending make a hook at one end and an eye at the other. Tie a small rope to the eye and hang it from the ceiling about three feet behind the cow. The length of rope depends on the height of ceiling. When ready to milk slip the hook on the tail just above the brush of the tail. Do not crowd it on, just let the tail lie in the hook which should bind just enough to prevent slipping. When not in use the hook and rope can be hung up out of the way.

Some old men or men and boys with poor sight have trouble in reading the marks on milk test bottles. The lines or marks or rings are etched in the glass and are not easy to see even with a good pair of eyes. So it pays to keep the etching filled with some sort of a blackening that makes a contrast against the white milk and makes the marks plain. Of course after a number of washings of the pipettes and bottles used for the test the blackness will come out. But it is easy to fill the etching again. There are some bottles and pipettes sold that are guaranteed to keep their "permanent black enameled graduation," but all of the ones we have on our farm are a long way from permanent.

Sore Eyes **Granulated Eyelids,** Eyes inflamed by exposure to Sun, Dust and Wind quickly relieved by Murine Eye Remedy. No Smarting, just Eye Comfort. At Your Druggist's 60c per Bottle. Murine Eye Salve in Tubes 25c. For Book of the Eye Free Write Murine Eye Remedy Company, Chicago

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35 x 4	25.75	28.30
36 x 4	26.00	29.20
33 x 4½	24.00	27.50
34 x 4½	25.00	27.50
35 x 4½	28.00	38.00
36 x 4½	29.00	39.00
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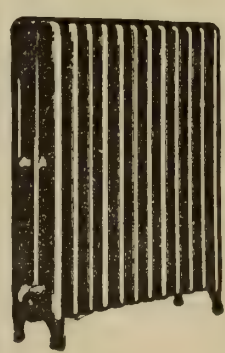

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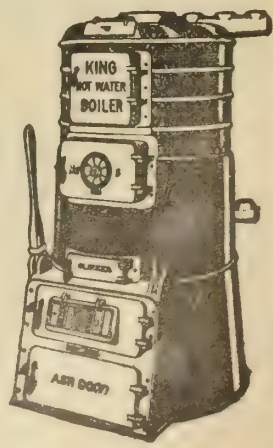

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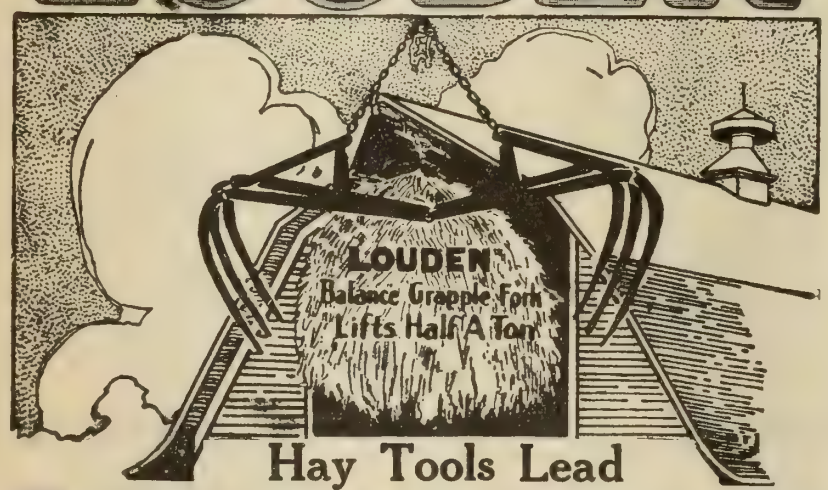

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.....Cows .....Horses .....Calves. I prefer to deal through
..... dealer at.....
My Name.....P.O.....Prov.....
53

Long-Term or R.O.P. Test Values

Continued from page 7

is doing. The O. P. testing helps such a man very much, especially with the testing, as few farmers are equipped with testing apparatus; and if they have a Babcock tester, most men have neither time nor inclination to make the tests, hence this part of the work is neglected.

Do Breeders Take Advantage of This Service?

Sometimes the Government goes to a good deal of trouble, and spends considerable money for services which apparently are not appreciated, or at least, very few farmers are interested. In order to find whether or not breeders are taking advantage of this service, we looked up the total number of cows recorded in the last report of the R.O.P. (the 10th) and find this to be 486, not counting those in the Appendix which have qualified for records but did not meet the rule of freshening within 15 months after the test begins. As not many owners have more than one or two cows eligible each year, we see that probably about 300 to 400 different breeders, representing all the Provinces (and all the dairy breeds as well as one dual-purpose breed) have cows which are eligible in these tests. This is a pretty fair indication that the R. O. P. work is appreciated and shows business intelligence on the part of our breeders of dairy stock. It has come to a point where it is very difficult to sell dairy cattle at reasonable prices except they have R. O. P. or R. O. M. backing. The conditions are more favorable still for good prices, if the animals offered have good records for two or more generations on the side of both sire and dam. In fact, there is scarcely any limit to the money which will be paid for good individuals belonging to any of the dairy breeds, if they have plenty of "big records" at their back. We may expect this feature of official testing to grow, and instead of 300 to 400 breeders doing R. O. P. testing, we shall have yearly 3,000 to 4,000 men in the near future who are breeding purebred dairy stock, asking for inspectors to be sent to dairy farms located between the Atlantic and Pacific Oceans.

One of the most difficult dairy animals to sell at a profit is the purebred dairy bull. As soon as the average dairy farmer in Canada becomes convinced of the value of the purebred dairy male for improving his common or grade stock, there will be such a demand for well-bred bulls that breeders will be unable to meet it. The markets for the bulk of such animals must be found right at home on the dairy farms of this country, but before this can be done, the dairymen on farms must be convinced that it will pay. The dairy farmer is now adopting a Missouri attitude of "show me." He wants to know if breeders of purebred stock can "deliver the goods." He must be shown by means of testing, first the purebreds, then the grades resulting from the use of registered sires on common cows. It would pay our dairy cattle associations to spend some money in demonstrating this point on farms where common or "scrub" bulls are being used. In one of the American States, the breeders are replacing the "scrub" males with purebred animals at no cost, except the value of the "scrub" as beef. This is a good policy to follow and it will mean a much wider market in the not distant future, or when the heifers from these purebred bulls commence milking. We may not expect to revolutionize dairying by this plan but it marks a decided step forward.

General Effects of the Dairy Industry

No one branch of agriculture is quite so important in Canada as is dairying. Our national development depends in no small degree on the progressive dairymen. Dairying cannot progress as it should without better cows. Better cows are the result of intelligent breeding, proper feeding, and careful handling. Intelligent breeding means the proper selection and mating of improved and improving animals. Testing of the foundation stock is necessary in order to make suitable selection. While private tests are of great value to the individual owner, the public prefers to depend on tests made by disinterested parties, preferably under Government supervision and control. Hence we see that future progress of the dairy industry of this country is closely identified with the testing of cows, as without good cows the industry, worth about $200,000,000 annually, is at a standstill, and may disappear, which would be a national calamity.

THE OTHER THINGS IN THE HOPE CHEST

Continued from page 14

ly, that Jip had never been encouraged to walk about the tablecloth during dinner. I began to think there was something disorderly in his being there at all, even if he had not been in the habit of putting his foot in the salt or the melted butter. On this occasion he seemed to think he was introduced expressly to keep Traddles at bay, and he barked at my old friend, and made short runs at his plate, with such undaunted pertinacity, that he may be said to have engrossed the conversation.

However, as I knew how tender-hearted my dear Dora was, and how sensitive she would be to any slight upon her favorite, I hinted no objection. For similar reasons I made no allusion to the skirmishing plates upon the floor; or to the disreputable appearance of the castors, which were all at sixes and sevens, and looked drunk; or to the further blockade of Traddles by wandering vegetable dishes and jugs. I could not help wondering in my own mind, as I contemplated the boiled leg of mutton before me, previous to carving it, how it came to pass that our joints of meat were of such extraordinary shapes, and whether our butcher contracted for all the deformed sheep that came into the world; but I kept my reflections to myself.

But it was not only Dora's housekeeping that went wrong. Her husband, who still adored her, missed something in the way of companionship.

"I had a great deal of work to do," he writes, "and had many anxieties, but the same consideration (Dora's tender heart and her sensitiveness) made me keep them to myself. I am far from sure, now, that it was right to do this, but I did it for my child-wife's sake. I search my breast, and I commit its secrets, if I know them, without any reservation to this paper. The old unhappy loss or want of something had, I am conscious, some place in my heart; but not to the embitterment of my life. When I walked alone in the fine weather, and thought of the summer days when all the air had been filled with my boyish enchantment, I did miss something of the realization of my dreams; but I thought it was softened glory of the past, which nothing could have thrown upon the present time. I did feel, sometimes, for a little while, that I could have wished my wife had been my counsellor; had more character and purpose to sustain me, and improve me by; had been endowed with power to fill up the void which somewhere seemed to be about me. But I felt as if this were an unearthly consummation of my happiness, that never had been meant to be, and never could have been."

For a while he tried with his usual tact and consideration to "form her character," only to discover that her character was already formed. The only comment on the discovery is:

"The old unhappy feeling pervaded my life. It was deepened, if it were changed at all; but it was as undefined as ever, and addressed me like a strain of sorrowful music faintly heard in the night. I loved my wife dearly, and I

was happy; but the happiness I had vaguely anticipated, once, was not the happiness I enjoyed, and there was always something wanting."

One of the saddest parts of the story is told in the few lines: "I had hoped that lighter hands than mine would help to mould her character, and that a baby-smile upon her breast might change my child-wife to a woman. It was not to be. The spirit fluttered for a moment on the threshold of its little prison, and, unconscious of captivity, took wing."

Dora had never known what it was to have a mother herself; her own motherhood lasted only for a moment. Might it not have been different if someone even when she was a little girl had carefully and intelligently treid to build up the perfect constitution that is every girls's birthright, if she had been taught the joy of playing out of doors as well as dancing in the ball-room? A beautiful thing about the whole tale is the way the author's own tenderness for his child-wife holds the reader's sympathy.

* * * *

Compared with the story of Dora we get another picture in Traddles' home. Traddles and his wife have not much of the world's goods at first but their home life has an irresistible cheerfulness.

"I am sure we are two of the happiest people," said Traddles. "I admit that, at all events. Bless my soul, when I see her getting up by candle-light on these dark mornings, busying herself in the day's arrangements, going out to market before the clerks come into the Inn, caring for no weather, devising the most capital little dinners out of the plainest materials, making puddings and pies, keeping everything in its right place, always so neat and ornamental herself, sitting up at night with me if it's ever so late, sweet-tempered and encouraging always, and all for me, I positively sometimes can't believe it, Copperfield!"

He was tender of the very slippers she had been warming, as he put them on, and streatched his feet enjoyingly upon the fender.

"I positively sometimes can't believe it," said Traddles. "Then, our pleasures! Dear me, they are inexpensive, but they are quite wonderful! When we are at home here, of an evening, and shut the outer door, and draw those curtains—which she made — where could we be more snug? When it's fine, and we go out for a walk in the evening, the streets abound in enjoyment for us. We look into the glittering windows of the jewellers' shops, and I show Sophy which of the diamond-eyed serpents, coiled up on white satin rising-grounds, I would give her if I could afford it; and Sophy shows me which of the gold watches that are capped and jewelled and engine-turned, and possess the horizontal lever-escape-movement, and all sorts of things, she would buy for me if she could afford it; and we pick out the spoons and forks, fish-slices, butter-knives, and sugar tongs, we should both prefer if we could both afford it; and really we go away as if we had got them. Then, when we stroll into the squares and great streets, and see a house to let, sometimes we look up at it, and say, how would that do, if I was made a judge? And we parcel it out—such a room for us, such rooms for the girls, and so forth; until we settle to our satisfaction that it would do, or it wouldn't do, as the case may be. Sometimes we go at half-price to the pit of the theatre—the very smell of which is cheap, in my opinion, at the money—and there we thoroughly enjoy the play, which Sophy believes every word of, and so do I. In walking home, perhaps we buy a little bit of something at a cook-shop, or a little lobster at the fishmonger's, and bring it here, and make a splendid supper, chatting about what we have seen. Now, you know, Copperfield, if I was Lord Chancellor, we couldn't do this!"

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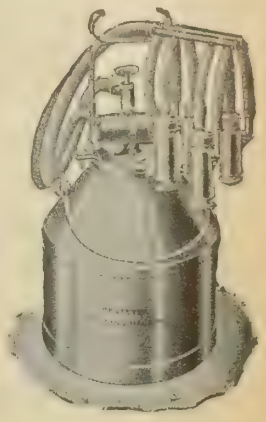

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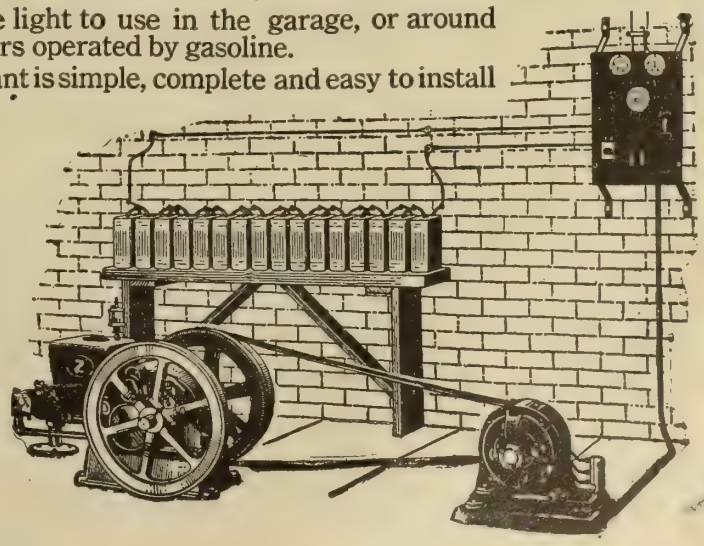

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LIVESTOCK

Horses at Royal City

By CLAYTON TUCKER

THE annual New Westminster fair, always one of the best in Western Canada, was discontinued during the war. It will be resumed the coming fall. New Westminster is the big town of the Lower Fraser Valley, where interest in purebred stock is as keen as anywhere in Canada, and its fair always has received plenty of support from stockbreeders. In addition to Provincial entries, there are usually representative animals from East of the Rockies and from South of the boundary.

There will be a heavy prize list in 1919. As typical of the spirit actuating the directors, it can be stated that the horse division, in which one might expect lagging spirit owing to the present mixed outlook in horse-breeding, will be pushed as energetically as any other, and that classes will be liberally filled. To review history a little, horse-breeding flourished in this Province during the heavy construction days, then slumped as many big undertakings were finished. Then the war started, drawing horses to it from all over America.

Reeve A. D. Paterson of Delta, president of the B. C. Stock-breeders Association, estimates the horse wastage since 1914 at 40 per cent. In addition there has been a general deterioration in quality. The motor truck and the tractor, which have displaced so many draft horses in the United States, have operated as yet on a much lesser scale in British Columbia, yet they are an appreciable influence there.

Still the draft horse people are *up and coming*. The display of superhorseflesh ought to be a feature at the New Westminister fair. Additional to regular premiums, Joseph Bulman of Stump Lake is offering a special handsome trophy to the winner, male or female, in a competition the terms of which he sets. It is a walking test, 100 yards and return, the winner to be determined on the basis of 30 points for time, 30 for gait, and 40 for conformation. Eligibles must be 1,600 lbs. or over, bred in this Province, and owned by exhibitor.

In offering the trophy, Mr. Bulman spoke interestingly. He said:

"My aim in this competition is to develop a better class of walker in the heavy animal division. Heavy horses which cannot walk are of little use to the modern business man or farmer. Heavy animals are not built to trot, I hold, for they will not stand up under the additional strain which running puts upon them. It shakes them, wears them down speedily and shatters their morale, to use a military phrase. I have seen fine animals ruined in a comparatively short time by being forced beyond a walk.

"Another point is that a heavy horse that is not a smart walker is 50 per cent. no good. Trot him and he soon spoils; if he can't walk he is always behind schedule. So the modern horse-buyer and user is always looking for a clean-limbed, smart-gaited animal. I want to see what the Province can produce in this class."

All of which, it will be seen, has a bearing on the vital problems which now confront the horse industry in the menacing trucks and tractors. Wayne Dinsmore, the well-known Percheron Society secretary, has said that the inefficient horse is doomed, but for the superior, well-bred animal, an efficient "equine motor," there will continue to be an important place. There can be no doubt that competitions like that which Joseph Bulman sponsors for the coming Royal City fair will help horse-breeders a lot in "finding themselves."

FEEDING PIGS ON PUG

BY THOS. DRENNAN

MY father used this method last winter and the winter before that. He would not know what to do without it now, as we are feeding eighty-two pigs.

It takes a great deal of money if you are feeding all chop or all grain, so here is a plan my father worked out which is indeed a great help and which the pigs like better than the clear chop or bran.

After you thresh your clover (either alsike or red clover) take a large box and a sieve, and pile the clover pug or hay which the clover seed has all been threshed out of (which I will hereafter call pug), on the sieve and shake until you shake the stuff out of it into the box. Then take about half chop and half pug and enough water to make it into a paste if you wish it wet. But if you wish it dry don't add any water.

This will winter over pigs of about two months old and also sows. I had thirteen and fed them on this, and when they came in they were fat and the pigs were fine, fat little fellows. After the sows came in I thought I'd better feed them something to make more milk, so I left off feeding the clover pug. But they would only eat about half and then leave it.

WESTERN CANADA'S CALL FOR BETTER STALLIONS

Continued from page 11

would be brought by the Government to Alberta. These sires would be bought in Scotland and France respectively and these countries would be diligently honeycombed with the object of securing the best sire of each breed that could be bought at any reasonable figure and with a guarantee of individual merit and breeding ability far beyond what any private individual might hope to import. When in Alberta these sires will be used only on a limited number of pure-bred mares, selected from among the best of each breed in the province. The male progeny will be placed in the hands of specially qualified breeders, with the hope of growing out a number of very superior sires, which will later be sold and distributed throughout the province.

Mr. Marshall has announced many popular agricultural policies in Alberta, but none have been more popular than this stallion scheme. He has been just as fortunate in receiving general public commendation as Manitoba was unfortunate in receiving such general criticism. The Provincial Horse Breeders' Association, the various breed associations, prominent farmers and breeders, whether large or small, have been unanimous in their praise of the scheme. It is a happy plan in that it does not enter into competition with any private individual, and offers a means of improvement of the sires in Alberta that should make that province famous in ten years.

Saskatchewan has not yet advanced any new policy for stallion improvement. How soon this may come has not been suggested, but if any scheme is advanced by the Saskatchewan Government it can be relied upon to give expression to the best thought in the province and provide a sane, practical solution of present difficulties, if there are any, in the path of progress in horse-breeding in that province. If nothing is forthcoming from Saskatchewan it is because they are content to await results from their present system

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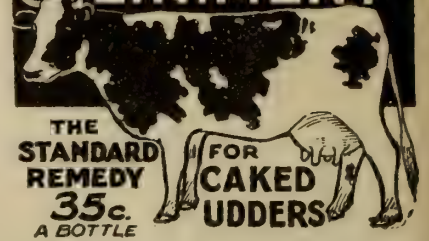

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of stallion inspection and enrolment, and with this foster the plan of club-hiring as conducted under the Live-stock Branch of the Federal Government. In the operation of her stallion legislation Saskatchewan has the enviable record of enforcing its provisions fearlessly and without favor, the result being that the province is rapidly becoming known as the home of good sires, and a poor place to bring in or breed the inferior type of stallion. Further than this, Saskatchewan can claim the ownership of more large establishments breeding Clydesdale stallions and mares of a truly superior order than almost any other province in Canada. This explains why less effort is necessary in the importation of high-class sires than in the other provinces.

THE COMING OF THE GOLDEN HOOF

Continued from page 16

ditions Canada fell back in sheep. In 1914, this country had only about two million head. At that time wool was worth about 14 cents per pound and sheep and lamb had previously been at a low level on our markets. Prices have advanced very materially. Wool last year averaged nearly five times as high as it did just previous to 1914. While the average price of lamb twenty years ago ran from 4 to 5 cents per pound live weight it averaged on our Toronto market last year for the entire year from 18 to 19 cents per pound. Every one expects, of course, now that the war is over that prices for these products will be lower. It is to be expected that eventually there must be a drop but unless something unforeseen happens it would appear that sheep breeding in Canada has a very bright future before it and that the boys who find themselves placed as Jack was can do no better than interest themselves in sheep. Higher prices for the past five years have increased the numbers of sheep in Canada from two million to three million head. There is a possibility that a market for both live and dressed lamb and mutton may be developed in Europe. There seems to be a bright future for the Canadian sheep breeder who starts early in life on a small scale, grows up with the business, and uses it as a part of his mixed farming operations.

Future of Sheep in Canada

We have a number of good breeds and all have been developed according to their special uses, but we must not forget that in this country mutton is the first consideration in our sheep and this closely followed by wool. It is scarcely likely that the special wool breeds such as the Merino and the Rambouillet will become extensively bred in this country. They may be used to some extent on the ranges but for the mixed farmer they have not, up to the present, found very much favor. They are distinctly wool breeds and are bred for that purpose.

In connection with the long and medium wool breeds which are common in this country we must always keep in mind market demands for the block. At present the market asks for a lamb which is not heavier than 80 to 90 pounds. Quality must be emphasized rather than too much size and coarseness. It would appear also that wool is going to be more important as compared with mutton, so that the sheep breeder must exercise greater care in the selection of his breeding stock, particularly sires, and must also give more consideration to the care of the wool, keeping it healthy and clean through proper methods in feeding and management. If the reader wishes to try a medium wool breed first let him select the breed he likes best from the following: Shropshire, Southdown, Hampshire, Oxford, Suffolk or Dorset; and if he favors a long wool breed he has the Leicester, Cotswold and Lincoln to choose from. Any of these is a good breed properly handled under favorable conditions. If he wishes to try something comparatively new to Canada, he might like that low-set, thick, heavy mutton sheep, the Rommey Marsh, or the Dual-purpose breed known as the Corriedale. This latter breed is a fair mutton sheep and the producer of a heavy fleece of fine quality wool. If wool remains high the breed may grow in favor in Canada as good individuals shear fourteen pounds of high quality wool as compared with about seven or eight pounds as an average for the Down breed.

THE HOME OF THE CLYDESDALE

Continued from page 11

ion than in this the land of his birth.

Few farmers exist in this favored land that do not possess at least one team of pure-bred Clydesdale horses, mares or geldings, and although the breed has spread over the face of the globe, the breeding and improvement of this great race of heavy draft horses is still one of the principal farming interests of the "canny Scot"—nearly all of them tenant farmers.

It would be superfluous to write of the many renowned horses, their breeders and owners, who lived and moved and played their part in making the name of the Clydesdale known throughout the farming world. Are they not written in the history of the breed, that he who is interested may read?

Historical Romance and horse breeding are not all the interests of these hardy sons of the soil. Nowhere can finer fields of oats, barley, wheat, mangolds and turnips be found. Where else can be seen such large herds of deep-milking placid-looking Ayrshire cows, with their gracefully curving horns and their camouflage-looking coloring of red, white and brown? Over the heather hills and moorlands roam the hardy, active flocks of black-faced sheep, under the care of the strong-limbed, deep-chested shepherd, with his trusty intelligent "collie" dog. Here also are found the black-polled Galloway cattle, with their smooth silky coats, from which is produced the marbled beef so much desired by the butcher. These black cattle have a history so ancient that their ancestry is lost in the mists of time.

To tell of the many butter, margarine and cheese factories, of the dairy and agricultural machinery productions, of the woollen mills would be to swell this sketch to too great length.

The life of the tenant farmers in the Southwest of Scotland is not an unending round of laborious toil as is sometimes imagined. They live in good houses, many of them own automobiles, practically all of them at any rate a pony and dog-cart; their sons and daughters have a piano in the drawing room. The social life is bright and good. The landlord is often as enthusiastic a farmer and breeder of stock as his tenantry; he mingles freely with them in their social, public and private life and pleasures.

The spirit of the land takes hold of you and grips you with its speed. This strange medley of modern industry and enterprise with its hard facts and problems, mingled with poetry and historical romance, and enhanced by the pleasant lowland accent of the people, makes a strong appeal to the imagination.

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For exterminating weeds this cultivator is essential, and for this purpose extra wide steels can be provided to be used in place of the reversible points.

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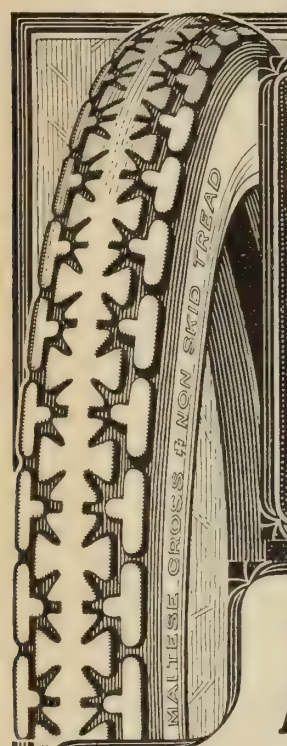

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Standardizing Our Farm Products

Continued from page 31

to the fact that no standards are required, there are as many grades placed on the markets as there are fruit growers. This places them under a serious handicap in competition with American and British Columbia fruit where the standards are set. Ontario fruit is without question a better quality but it does not command as high a price as the standardized fruit offered by American and British Columbia fruit growers. Thus it is clearly seen, that the public demand is for a product upon which they can depend. Fruit may be a better quality, but unless it is graded properly and placed on the market in attractive packages the public will not buy it, providing they can purchase a similar product that is standardized. Hence in order for the fruit growers to gain the trade and confidence of the consumers they must standardize their fruit.

Apples are undoubtedly one of the most difficult products to standardize, but they are being successfully standardized throughout Canada at the present time.

The consumer derives the benefit of set standards in that he is protected, and knows that when he purchases ten barrels number one apples he is getting a uniform product in every barrel.

Standardization, therefore, is bound to break down the feeling of antagonism that exists between the producer and consumer. It goes a long way toward bringing about the elimination of the middle-man and speculator. Furthermore, standardization will create and stimulate a co-operative movement among producers of similar products. These men are placed on a common basis when it comes to marketing their goods. Again, when they are organized for the purpose of selling, it will naturally follow that they will become organized in the purchase of supplies. This itself will mean thousands of dollars saved to fruit growers of Canada.

Greater production is demanded of the people of Canada. They are willing to respond to the demands but together with this increased production we must have a higher quality product. In order to obtain this, it is only logical to say that unless the producer is assured of a higher price we cannot ask him to expend time and labor producing high-grade commodities. Standardization, therefore, will enable the people of Canada to be adequately recompensed for the additional labor expended. It will stimulate and bring about a change in the ideals of the average men who produce marketable products.

The present movement throughout Ontario for the growing of one or two standardized varieties of potatoes is a step in the right direction.

Many districts in this Province are admirably suited for the production of excellent potatoes, both as regards soil and climatic conditions.

The experiment stations have done a great deal towards improving the seed and showing by a conducted series of experiments what varieties do best on the different kinds of soil and under various conditions.

In some parts of Canada where they grow only one variety of potato, we find that these districts realize a higher price and secure a more ready market on account of the uniform quality of their product.

Again, we notice that where potato growers are organized co-operatively for the purpose of growing and marketing their product they secure a more uniform price and realize a greater profit.

Organizations like these are able to secure all supplies, such as fertilizers, machinery and all necessary equipment at a great reduction. Again, they are able to standardize their crop and keep in touch with the markets, so that they can find a market that is not glutted. Furthermore, they are able to ship in such immense quantities that they secure better transportation facilities at a much cheaper rate than if each individual grower attempted to find a market and ship on his own account. If when the crop is harvested, graded, and ready for selling they find that no market is available they can store their crop and hold it until such time as an opportunity presents itself, for them to dispose of their crop.

Here, again, we see the encouragement offered to the energetic producer. The better product he produces the higher will his crop grade out. In addition to having a higher grade he will secure a more satisfactory price. This condition will lead to the improvement of the entire potato industry. Competition among the growers will be keen. Those who practise the most scientific methods of cultivation will be amply rewarded for their painstaking efforts. On the other hand the negligent grower will be spurred on to improve his methods.

During the past two years all butter and cheese exported have been classified into definite grades and paid for strictly on a quality basis. This scheme has proved so satisfactory that some of our leading dairy experts favor the idea of standardizing these commodities.

Mr. J. A. Ruddick offers the following scheme: All cheese and butter would be shipped regularly from the factories to a central warehouse at Montreal, where it would be graded by a Government grader and then offered for sale by auction to the highest bidder and according to the real quality of each lot.

This is indeed a step in the right direction because, during the war, prices were advancing steadily and the market was always buoyant, so that the question of quality was not noticed to an appreciable degree. Buyers knew that owing to the great advance in prices there was very little danger of having to lay much stress on quality.

Recently it has been pointed out by a dairy expert that Ontario cheese compares fairly well with cheese made in other Provinces but that the Ontario butter falls down woefully. This shows again the advantages of standardization. Alberta and all the Western Provinces and Quebec have adopted the grading system. The result is that each year shows an increase in the amount of dairy products classed as No. 1. The people are bound to be encouraged to improve their stock and take better care of their milk and cream.

We have only to consider New Zealand to find an example of the benefits of standardizing the dairy products. In New Zealand it is compulsory to have all cheese and butter intended for export graded. New Zealand has succeeded in gaining and holding a place in the world's market for her dairy products.

The dairyman who is paid for his products on a quality basis is bound to produce a better article. He is bound to employ the most up-to-date methods in his business.

Canadian dairy products will find a ready market in England provided they are standardized. We, as a nation, should see to it that the Canadian brand appears only on high quality products.

The people of Canada cannot afford to let other nations step in and take away the English market. It is ours and can be securely held, provided that, we organize our producers, standardize our products, and get away from the old worn-out methods.

There are many obstacles to be met in introducing this system. The task will be by no means easy to accomplish, but competition is so keen on the world's market that Canadians cannot afford to remain inactive. The same spirit that carried our troops to success on the fields of France, must be shown by those of us who now enjoy the fruits of their unconquerable courage.

The world's market should not be left to those countries who for four

years fed the Hun and by so doing shed the blood of the most courageous of Canada's sons. The English language is entirely inadequate to describe what we think of nations who perpetrated these deeds.

In the case of Denmark we find that for many years her products were without peer on the English market. This high state of efficiency was attained by her excellent system of co-operative organization, and the adoption of a system of standardization.

Canada can accomplish anything that any other nation has accomplished. The fertile fields of Canada can produce the crops. The leaders in Canada can organize the people, who are certainly a more intelligent race than the Danes. The products of Canada can be placed on the world's markets and can successfully compete against any competitors, providing we pay strict attention to the quality. This can only be achieved by the introduction of a system of standardization.

EARLY POTATO MOVEMENT AND MARKETS

THE U.S. early potato crop is grown chiefly in fifteen states with a normal total production of around sixty million bushels, says the *Market Growers' Journal*. The greater part of these are not shipped as carlots but may be stated as such for convenience in comparison and the crop would be equal to 100,000 cars of 600 bushels each.

Of this total, which includes late as well as early potatoes in these states, also the product of the home and farm gardens and the supplies for local and nearby consumption, a little over one-third usually appears in the form of early carlot shipments, which ranged from 34,000 to 37,000 cars yearly, in recent seasons. In addition, several thousand cars of medium early potatoes are shipped from Northern states toward the close of the early shipping season.

In these fifteen states, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Missouri, Kentucky, Kansas, Oklahoma and Arkansas, the strictly *commercial early* shipping area, moving its crop from April to September inclusive, comprises about one-third the *total* potato area or normally somewhat above 200,000 acres. This year the commercial acreage of early potatoes, nearly all in these states, according to early reports of the Bureau of Crop Estimates, was only 132,245 acres, compared with 228,445 last year and 224,550 in 1917. This severe reduction for the present year is attributed chiefly to the high cost of production in recent seasons. Quite possibly the actual planting in some of these states may be larger than shown by early indications. Recent unofficial reports suggest that the advancing potato markets and the reports of the short acreage in the southern commercial potato area may lead to heavier planting than at first expected in parts of Maryland and Virginia. The early Northern acreage in such states as New Jersey, Minnesota, Missouri, New York, etc., will no doubt be influenced more or less by these causes.

The active carlot movement of the early crop begins in April in Florida and Texas and ends in September for Maryland, Kansas and Missouri. The extreme southern and south-central districts are practically done by the end of August. Shipments of the early crop in carlots are about one-fourth the total number of carlots of potatoes shipped during each season but car loading in the southern section averages only about 600 bushels per car, while during a greater part of the season the northern sections in recent years have averaged about 700 bushels per car. Last season the total potato movement was 161,672 cars, of which 34,309 moved from these fifteen states, April to September, inclusive. For the preceding season, the total was 127,351 cars, of which 39,492 cars moved from these fifteen early shipping states. Last season, the yield and movement from the early area was in reduced proportion to the general crop, owing to the light out-turn in Virginia, Maryland and the south-central early area.

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Fall Strawberries

By F. B. HOUSSER

WITHIN the last five years a good deal of interest has been aroused in a new type of strawberries known as "fall" or "ever-bearing." The difference between these and the ordinary old-fashioned berry lies in the new variety's ability to bear blossoms continuously from May until the end of the growing season.

The first of this new race originated on the farm of Mr. Samuel Cooper in Cattaraugus county, New York State. This was in the year 1898 and Mr. Cooper can give no explanation as to why a certain plant in his garden continued to bear long after the regular picking season was over. There are now a large number of different varieties on the market and from all appearances there is no difference between the "ever-bearers" and the spring strawberries.

My experience with this new debutant in the berry world has taught me that a small beginning is the wisest and safest policy. The prospect of twenty-five or thirty cents a quart is apt to run away with the amateur's discretion and cause him to over-plant at the start. As a commercial proposition on a large scale I have yet to meet anyone who recommends them but, as a small side-line, they are well worth anybody's trouble. One hundred plants are enough to try out the first year and increase your plantings as you see fit.

The varieties that have proved the best with us are "Progressive" and "Superb." The methods of planting are the same as with the ordinary varieties, namely, the matted row, the single and double-hedge rows or the hill system.

The matted rows are set three to four feet apart with the plants from 18 in. to 30 in. This method will produce the most berries but they will be undersized and bring only a very small price per box. The most satisfactory way, especially in a garden, is the hill system where the plants are put 15 by 30 inches apart and the runners kept cut until about the first of August when they can be allowed to take root and set out as described later.

In planting it will be found most convenient to use a flat dibbler instead of the ordinary round ones. A stiff trowel makes an excellent tool. With one stroke you can open the hole and with another pack the soil tightly about the roots. The ground should be well enriched with rotted manure and the roots must be set without bending, taking great care not to plant too deep and cover the crown. A good plan is to dip the roots in water just before planting. By trimming the roots even with a pair of sharp scissors, planting will be made easier. It is also well to trim off all but two leaves for the same reason as you prune a fruit tree.

And now comes the part of growing fall strawberries which most people hesitate to practice. If the plants have been set out in April or May they will begin to show their blossoms in June but, instead of letting them set fruit, it is necessary to pick them *before* fruiting. This work requires a great deal of patience and it is one of the reasons why I have recommended planting only a small patch the first year, for the labor involved in keeping the blossoms from fruiting is the greatest problem, outside of the fruit-picking, which the grower has to meet. If this work is not done you will only get the ordinary spring berries, for the fruit which will come later will not be of much account. Keep this blossom-clipping up until about the first of August and then let the berries set on the vines. They will be much more luscious if runners have been kept cut and special attention given to cultivation during the hot month of July.

Some text-books recommend mulching with straw just before picking time, but our experience with this practice has not proven its wisdom. Many successful growers do it successfully and it has one great advantage in that the berries are always kept clean and in good color.

I estimate that we pick about a quart from each plant in a season. This is not such a high yield when we consider the fact that the plants continue to give fruit up to October 1st. In 1916 we picked fruit on October 15th. As the cold weather comes on the berries become smaller and less colored but the taste is almost, if not quite as good. The price in Toronto ranges around twenty-five cents a box.

If you wish to set out runners for a new crop the most convenient time to do it is in August. During the last week in July or the first of August allow one or two of the strongest to root well and around the twentieth of August transplant them to their new bed. In a normal year they will be fairly well set by the time cold weather comes, when they should be covered with straw after the ground is frozen and left till spring. It is important to see that all your new and old plants are well covered in this way. Two years ago I lost nearly two thousand plants by not paying enough attention to this point. It is also important to remove the covering early in the spring before the growth is too far advanced. The transplanted runners set out in the fall will bear a crop the following year and, if you don't wish to wait till fall to pick them, they make a good spring berry.

One very important thing is to find out from the nursery whether the plants you buy are "pistillate" or "bi-sexual" (self-pollinating). If your shipment consists of both types the rows should be set out alternately putting the bi-sexual rows on the outside of the patch and, every other row, pistillates. This insures the transference of pollen from the bi-sexual to the pistillate varieties and the neglect to look after this simple point explains why some strawberry beds fail to yield any crop.

There are many minor points about growing strawberries which space will not allow to me to take up. There are probably few crops offering such strong financial inducements and requiring such careful attention to detail. Methods vary with each grower. One will tell you a straw mulch is essential to preserve the necessary moisture and others will object to this practice. Many of the most expert growers use pots in which to root the runners and, if the grower has time to do this, it will undoubtedly give him better and stronger plants. Fall strawberries are better to be renewed every season.

If you once grow a few plants in your garden you will never want to be without them again.

B.C. FARM BREVITIES

By J. T. Bartlett

WHILE the contract price for jam-making raspberries was still in the air, an announcement appeared in the Coast press that the manufacturers were importing raspberry pulp from Tasmania. The manufacturers were offering local growers 12 cents, and the growers held off for 15. It is said the Tasmania importation amounts to 62 tons, and costs the factories, laid down, around 14 cents a pound. It is not believed the importation has any permanent significance.

The municipality-owned irrigation system at Summerland, Okanagan Valley, is being extensively improved this season, a gang of 60 to 70 men being employed. A. W. E. Fawkes is the permanent engineer in charge. This system covers some 5,000 acres of land.

In a case which aroused considerable interest in the ranching interior, Rex v Dubois, tried at Clinton, a conviction was obtained. The accused, a homesteader, was found guilty of stealing stock. It was the first time since records were first kept that such a conviction had been obtained in the East Lillooet district.

In those districts of British Columbia devoting much time to fruit and poultry, farmers drawn from many diverse occupations may be found. As an example, at Chilliwack, one of the leading farming districts, A. H. Ingram, of Fairfield Island, is a very progressive small fruit grower, while Stallard's poultry farm is pointed out to visitors as among the largest. Ingram was formerly a drummer for a jewelry firm. Stallard was at one time an Alaska miner.

Surveyors are at work on the 22,000-acre soldier settlement tract south of Penticton. The providing of irrigation facilities is a fundamental task on this project. It is expected that construction of the first main ditch unit, 200 men being employed, will begin in June.

Prince George, on the Grand Trunk Pacific, reports many vitisors and a "steady stream of enquiries" at the local Government office, all with a view to settlement. A soldier settlement area, of which there are prospects, would help much here, it is said.

CANADIAN MILK RECORDS

By Geo. E. Day

IT would be foolish to say that all Shorthorn cows are good milkers. neither can such be said of a strictly dairy breed, but the Canadian Record of Performance (R.O.P.) for Shorthorn cattle, which was instituted only in the spring of 1913, has demonstrated very clearly that the Shorthorn cow is capable of giving a good account of herself at the pail. The results are all the more remarkable when we take into account the fact that only a small proportion of Shorthorn cows are milked by hand, by far the larger proportion of them being allowed to nurse their calves. As a result, most of the heavy milking cows within the breed are never given a chance to demonstrate their capacity as milkers. In spite of this heavy handicap, and the short time during which records have been kept, we find that to December 31, 1918, 207 R. O. P. certificates had been issued to Shorthorn cows, and following are the averages for different ages.

	Average Lbs. Milk	Lbs. Fat
95 Mature Records	8,388	328
27 Four-year-old Records	7,958	320
44 Three-year-old Records....	6,600	265
41 Two-year-old Records....	6,218	257

These may be regarded as very satisfactory averages for a breed which is not claimed to be a dairy breed, and which can produce market-topping steers.

All Under It. Chicago "News."

TRACTORS AT MEDICINE HAT

THE first farm tractor demonstration in Alberta was held at Medicine Hat, on Friday, April 25. Some 2,000 spectators watched the four tractors for from four to five hours break, disc, seed and harrow at the rate of between 50 and 60 acres of land in one day.

Making the event of far more than ordinary interest was the fact that the demonstration was not in the nature of a competition but a straight demonstration of the working capability of the modern small tractor on the farm. The work actually accomplished was practical tilling of the soil from breaking the virgin prairie sod to the actual sowing of the seed.

The property whereon the demonstration took place is to become Medicine Hat's model farm. Situated in the river flats within two miles of town. the site is admirably suited for the project and should prove of real benefit to the farming community of Alberta.

WHY A SILO ON THE FARM?

By R. W. Clark

1. One-third greater returns can be secured from the land than when the corn is cured the ordinary way.
2. More livestock can be kept with silage than without it.
3. More of the corn crop can be saved than in any other way. This saving varies from 35 per cent. to 50 per cent.
4. Surplus silage can be carried over to years of scarcity. Good silage will keep for years.
5. The value of straw is greatly increased by feeding it with silage.
6. Silage nearly doubles the profits of dairying.
7. Silage increases the profits of beef from 25 per cent. to 50 per cent.
8. Good silage is a splendid and economical feed for horses, but poor silage may kill them.

UNCLE HENRY ON THE PASSING OF THE HORSE

Every little while they tell us that the horse has got to go,
First the trolley was invented 'cause the horses went so slow,
And they told us that we better not keep raisin' colts no more.
When the street cars got to toting what the horses pulled before,
I thought it was all over for old *Fan* and *Doll* and *Kit*,
S'posed the horse was up and done for, but he aint went yit.

When the bike craze first got started, people told us right away
As you probably remember that the horse had saw his day.
People put away their buggies and went kitin' round on wheels,
There was lots and lots of horses didn't even earn their meals;
I used to stand and watch 'em with their bloomers as they'd flit.
And I thought the horse was goin', but he aint went yit.

Then they got the horseless carriage and they said the horse was done,
And the story's been repeated twenty times by Edison.
Every time he gets another of his batteries to go
He comes whoopin' out to tell us that the horse don't stand a show.
And you'd think to see these chauffeurs, as they go a chauffin' it
'Twas good-bye to Mr. Dobbin, but he aint went yit.

When the people git to flying in the air I s'pose they'll say
As we long have been a sayin' that the horse has had his day,
And I s'pose that some old feller just about like me will stand
Where it's safe and watch the horses haulin' stuff across the land;
And he'll maybe think as I do while the crows above him flit
Oh—they say the horse is done for, but he aint went yit.

—*The Horseman.*

Remodelling the Old House

By GENEVIEVE

ONE of our Western readers writes: "We wish to remodel our house this spring and I am enclosing a rough plan of it. We propose to remove the kitchen and build another or raise this one and build two bedrooms upstairs. We require a bathroom and two more bedrooms at least. There are no closets in any of the rooms. We have used the small room as one, and at times it has served as a bedroom. It might be used as a bathroom but is very cold. We have a wood furnace which we intend to replace with a coal one. We also intend to put in a water system. The pantry, although large, is very little

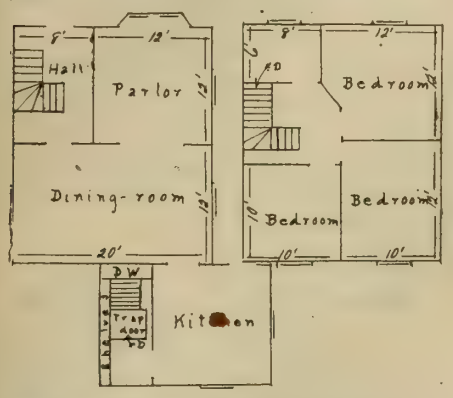

Diagram showing layout of both floors as the house is now.

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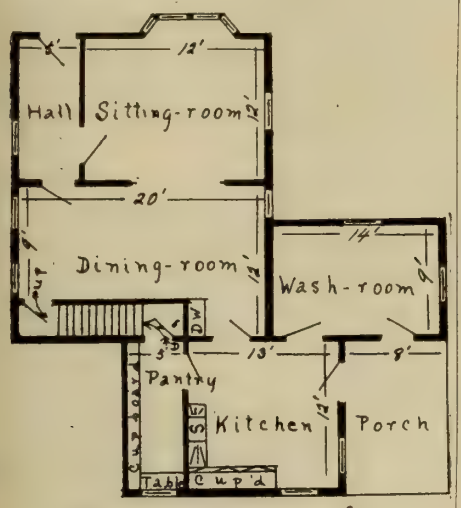

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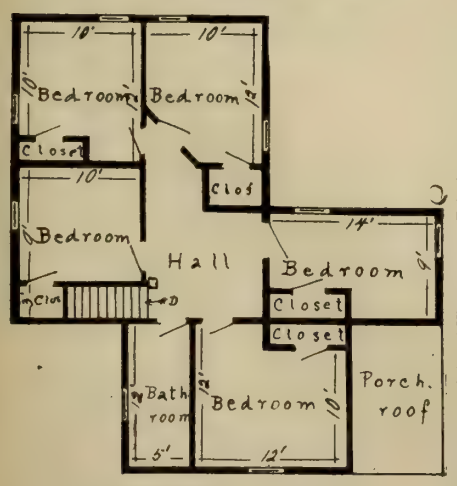

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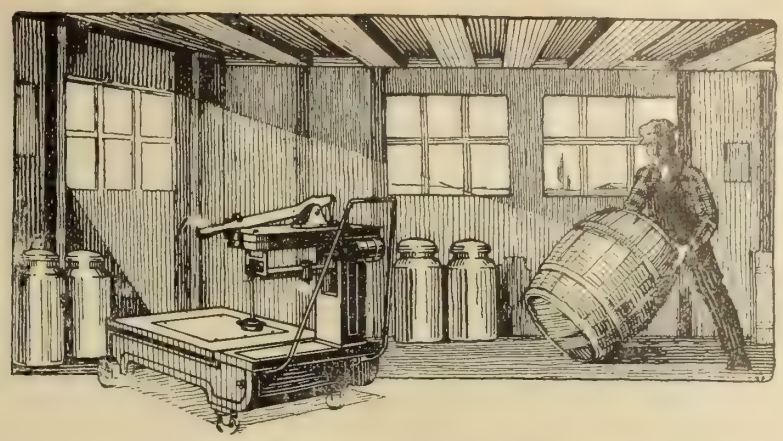
Continued on page 44



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Fairbanks Portable Farm Scales have a capacity of one ton in divisions of half pounds. They are equipped with a 26x34 inch platform, 11½ inches off the ground, with ball-bearing swivel casters, low weighing post, convenient handle, and bag rack for the weighing of vegetables. These compact and complete scales are a correct part of the equipment of every farm. Their accuracy is unquestioned.

Fairbanks Union Scales

are economical, convenient and accurate for household and store use. Capacity 240 pounds. Write today about scales for your farm or home.

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This stocking has a two-ply leg and three-ply heel and toe. It is knitted from extra-long yarn—spun by ourselves to make sure it is right.

Special training is necessary to knit Buster Brown quality into hosiery. We have spent years training our employees to knit Buster Brown Stockings.

Because we do all these things, you'll find them *longer-wearing*. You'll be pleased to see how seldom they appear in the mending basket. You'll find the cost of clothing your boy lower.

And they're mighty fine looking too. Good looks are knit into Buster Brown Stockings. You'll find your boy will be proud of them.

Sold everywhere. Ask your dealer for "Buster Brown" durable hosiery.

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For full information as to terms, regulations and settlers' rates, write to

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GALESBURG, KANS., U.S.A.

boiling salted water until tender, or about twenty minutes. If the squash still seems too watery, turn it into a cheese-cloth placed over a colander, drain and wring in the cheese cloth, mash and season with butter, salt and pepper.

It is pretty safe to say that the more ed vegetables eaten the better for the health of the family. It is not too late yet to sow head lettuce, which makes perhaps the best single salad vegetable grown. With crisp, young lettuce of any kind, and cucumbers, tomatoes, cress, cooked carrots and beets as they come in season it is not difficult to have a variety of salads throughout the season. The home in the neighborhood of a spring creek may have another delicacy in the way of a supply of water cress.

The following recipe for a boiled salad dressing will be found very good. Mix together, dry, one teaspoon salt, one tablespoon mustard, one heaping teaspoon flour, one tablespoon sugar, a little cayenne pepper. Beat the yolks of three eggs in, stir into the dry mixture until smooth. Add butter the size of two eggs, two-thirds of a cup of milk and two-thirds of a cup of vinegar. Cook until thick.

REMODELLING THE OLD HOUSE

Continued from page 41

The first change was to move the stairs from the front hall to a place in the dining-room, which would make it possible to have the cellar stairs opening from the pantry go down below them; this does away with the heavy trap door and makes the pantry a usable room. There is no need then of the hall being so wide, so we have narrowed it to five feet. If you did not want a hall there to protect the other rooms from cold, the wall might be taken out altogether, giving you a good large sitting-room right across the front of the house. Or you might make just a small vestibule inside the door.

We have added a washroom as you suggest as well as a back porch. The plan of having the washroom open from the outdoors as well as into the kitchen you will find very convenient. This washroom could also be used as a laundry.

The stairs comes up on the second floor in a good place to make a central hall, with doors opening into all the rooms on the floor. As the plan shows, it has been necessary to cut the corner off one bedroom to make room for a doorway, but this does not seriously interfere with the space inside. We have closets off each bedroom, and have provided the two extra bedrooms you wanted. The bathroom has been placed over the pantry so that the wall is directly over the wall of the kitchen, where the sink is installed; this gives a simple, direct system of plumbing. The placing of the partition walls upstairs has been as far as possible directly over those downstairs, so that hot air pipes can be run up to every room.

OUR CANADIAN DEBT

In five years the net debt of the Dominion has increased from $335,996,860 to $1,420,000,000, which means an increase of from $43.49 to $160.72 for every man, woman and child in the Dominion. The carrying charges on this debt, including interest and sinking funds, have advanced from $1.96 per capita in 1913-1914 to an estimated $12.16 per capita for 1919-20. During the war expenditure on consolidated fund account has risen from $127,384,473 to an estimated $351,785,491 for the current fiscal year. In the same period capital expenditures have jumped from $37,180,176 to an estimated $85,893,581, exclusive of war expenditures which are estimated for the fiscal year at $296,696,614. Further, during the period 1900-14 Canada borrowed $2,713,300,000 in excess of revenue for Federal, Provincial, municipal, industrial and other purposes.

Remodelling the Old House

By GENEVIEVE

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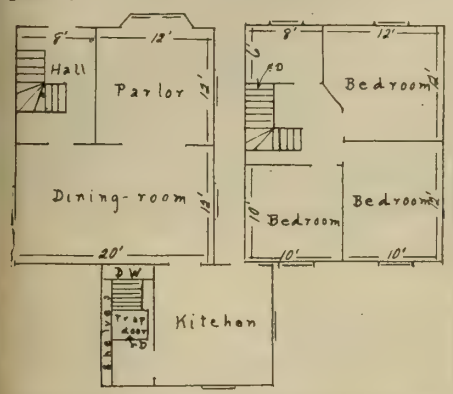

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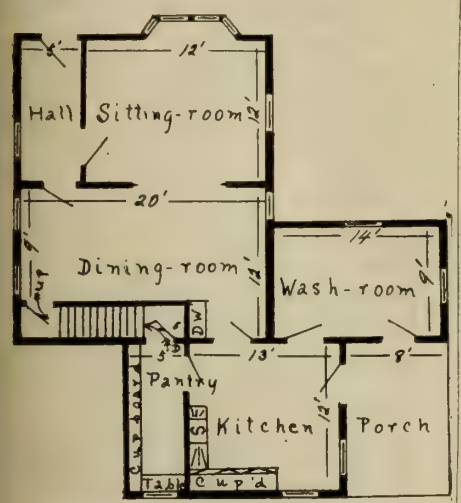

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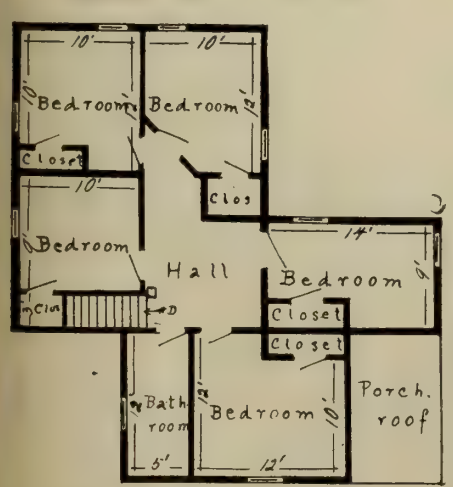

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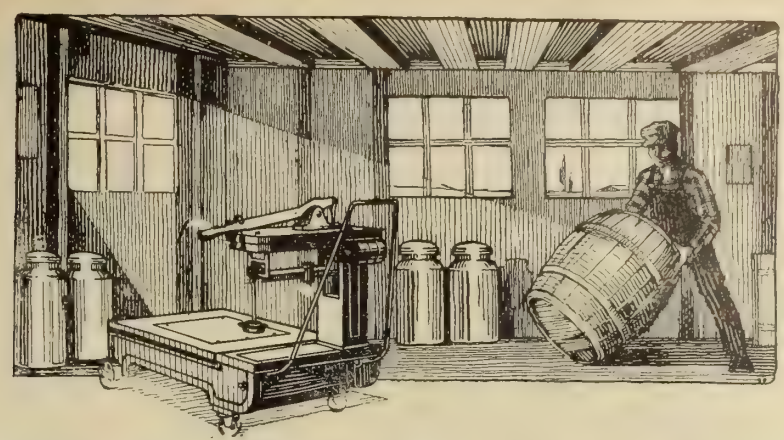

Fairbanks Portable Farm Scales

—the handy scales for the barn, the dairy, in the granary and the house.

These are the scales designed for the farmer and adapted to every use to which medium sized scales can be put. No detail which would make them the complete farm scales has been overlooked. Fairbanks Portable Farm Scales have a capacity of one ton in divisions of half pounds. They are equipped with a 26x34 inch platform, 11½ inches off the ground, with ball-bearing swivel casters, low weighing post, convenient handle, and bag rack for the weighing of vegetables. These compact and complete scales are a correct part of the equipment of every farm. Their accuracy is unquestioned.

Fairbanks Union Scales

are economical, convenient and accurate for household and store use. Capacity 240 pounds. Write today about scales for your farm or home.

13

The Canadian Fairbanks-Morse CO., LIMITED

St. John Quebec Montreal Ottawa
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Over There— Over Here

STAG Chewing Tobacco is appreciated by both of Canada's war units —those who fought in Flanders and those who served at home.

It is also enjoyed by civilians of all classes throughout Canada and is recognized as being

"Ever-lasting-ly Good"

Long-Wearing Stockings for Active Boys

THE rough and tumble games in the school-yard are mighty hard on stockings. Boys *will* play hard, so we make a stocking specially for them—the Buster Brown Stocking.

This stocking has a two-ply leg and three-ply heel and toe. It is knitted from extra-long yarn—spun by ourselves to make sure it is right.

Special training is necessary to knit Buster Brown quality into hosiery. We have spent years training our employees to knit Buster Brown Stockings.

Because we do all these things, you'll find them *longer-wearing*. You'll be pleased to see how seldom they appear in the mending basket. You'll find the cost of clothing your boy lower.

And they're mighty fine looking too. Good looks are knit into Buster Brown Stockings. You'll find your boy will be proud of them.

Sold everywhere. Ask your dealer for "Buster Brown" durable hosiery.

The Chipman-Holton Knitting Co., Limited
Hamilton, Ont.—Mills also at Welland

The BUSTER BROWN STOCKING
SUNSHINE HOSIERY REGISTERED

A Vast New Land Waiting for You

Settle in NORTHERN ONTARIO

Opportunity awaits the man who will strike out to the rich, fertile land of Northern Ontario. Millions of acres of virgin soil obtainable at 50c an acre in some districts, and in others Free, are calling for cultivation. This land contains immense resources in timber, mineral, waterpower, fish, game and scenery, and is one of the greatest expanses of fertile territory in the world. This land calls for men to cultivate it; in return it will give health, comfort and prosperity. Thousands of farmers have responded to the call. How about you?

For full information as to terms, regulations and settlers' rates, write to

H. A. MACDONELL, - Director of Colonization

G. H. FERGUSON
Minister of Lands, Forests and Mines

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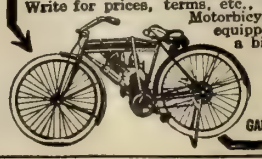
TORONTO, ONT.

Make Your Bike a Motorcycle

The Shaw Attachment Fits Any Bicycle

Makes your old bike a dependable, easy-running, light weight power machine. Compact. Easy to attach. No special tools or knowledge necessary. Battery or magneto. Thousands in use in U. S. and foreign countries. Wonderful hill climber. **FREE BOOK**—Write for prices, terms, etc., also about Shaw Motorbicycle, a completely equipped power bike at a big saving.



SHAW MANUFACTURING COMPANY
Dept. 187
GALESBURG, KANS., U.S.A.

boiling salted water until tender, or about twenty minutes. If the squash still seems too watery, turn it into a cheese-cloth placed over a colander, drain and wring in the cheese cloth, mash and season with butter, salt and pepper.

It is pretty safe to say that the more and vegetables eaten the better for the health of the family. It is not too late yet to sow head lettuce, which makes perhaps the best single salad vegetable grown. With crisp, young lettuce of any kind, and cucumbers, tomatoes, cress, cooked carrots and beets as they come in season it is not difficult to have a variety of salads throughout the season. The home in the neighborhood of a spring creek may have another delicacy in the way of a supply of water cress.

The following recipe for a boiled salad dressing will be found very good. Mix together, dry, one teaspoon salt, one tablespoon mustard, one heaping teaspoon flour, one tablespoon sugar, a little cayenne pepper. Beat the yolks of three eggs in, stir into the dry mixture until smooth. Add butter the size of two eggs, two-thirds of a cup of milk and two-thirds of a cup of vinegar. Cook until thick.

REMODELLING THE OLD HOUSE

Continued from page 41

The first change was to move the stairs from the front hall to a place in the dining-room, which would make it possible to have the cellar stairs opening from the pantry go down below them; this does away with the heavy trap door and makes the pantry a usable room. There is no need then of the hall being so wide, so we have narrowed it to five feet. If you did not want a hall there to protect the other rooms from cold the wall might be taken out altogether, giving you a good large sitting-room right across the front of the house. Or you might make just a small vestibule inside the door.

We have added a washroom as you suggest as well as a back porch. The plan of having the washroom open from the outdoors as well as into the kitchen you will find very convenient. This washroom could also be used as a laundry.

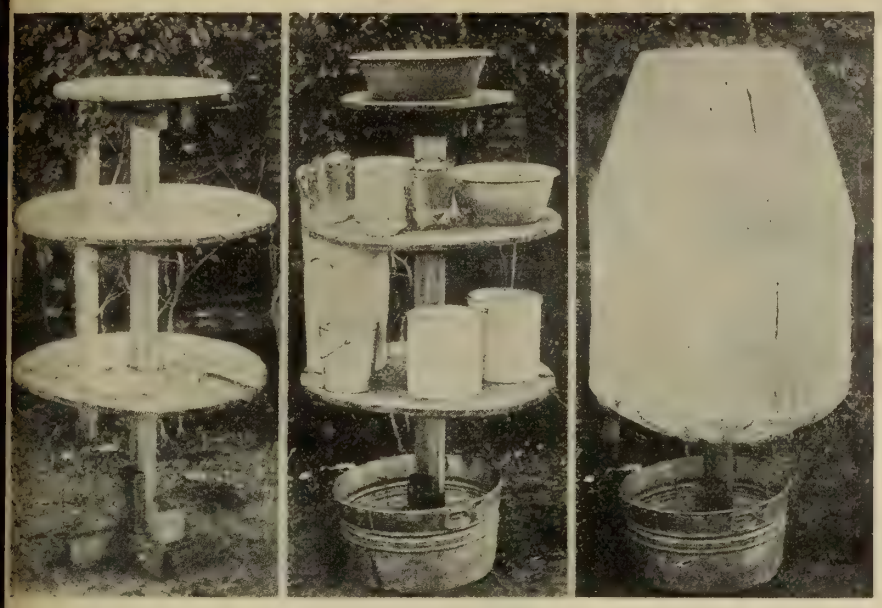
The stairs comes up on the second floor in a good place to make a central hall, with doors opening into all the rooms on the floor. As the plan shows, it has been necessary to cut the corner of one bedroom to make room for a doorway, but this does not seriously interfere with the space inside. We have closets off each bedroom, and have provided the two extra bedrooms you wanted. The bathroom has been placed over the pantry so that the wall is directly over the wall of the kitchen, where the sink is installed; this gives a simple, direct system of plumbing. The placing of the partition walls upstairs has been as far as possible directly over those downstairs, so that hot air pipes can be run up to every room.

OUR CANADIAN DEBT

In five years the net debt of the Dominion has increased from $335,996,860 to $1,420,000,000, which means an increase of from $43.49 to $160.72 for every man, woman and child in the Dominion. The carrying charges of this debt, including interest and sinking funds, have advanced from $1.9 per capita in 1913-1914 to an estimated $12.16 per capita for 1919-20. During the war expenditure on consolidated fund account has risen from $127,384,473 to an estimated $351,785,491 for the current fiscal year. In the same period capital expenditures have jumped from $37,180,176 to an estimated $85,893,581, exclusive of war expenditure which are estimated for the fiscal year at $296,696,614. Further, during the period 1900-14 Canada borrowed $2,713,300,000 in excess of revenue for Federal, Provincial, municipal, industrial and other purposes.

Hot Weather Conveniences

The Home-made Fireless Cooker and Iceless Refrigerator



The simpler type of iceless refrigerator.

THERE are many advantages in having a fireless cooker in the home. It not only saves time and fuel but keeps the woman from standing over the hot fire, and there are many foods that are better when cooked at a lower temperature. The principle of the fireless cooker is to retain the heat by boiling the food in a vessel with a tight cover, and placing it in the cooker in the same vessel, thus keeping the heat from escaping. An outside container may be made to accommodate one or more cooking vessels. A cheap but efficient fireless cooker may be made of a tightly built wooden box, a barrel, or a tin lard can as shown in the illustration. If the outside container is of wood it must be lined on the inside with asbestos or heavy paper to keep out the air.

The nest may be a galvanized or tin bucket of a size which will admit of three inches of packing between the outside container and the nest. The sides and bottom of the nest are covered with asbestos to prevent the scorching or the burning of the packing.

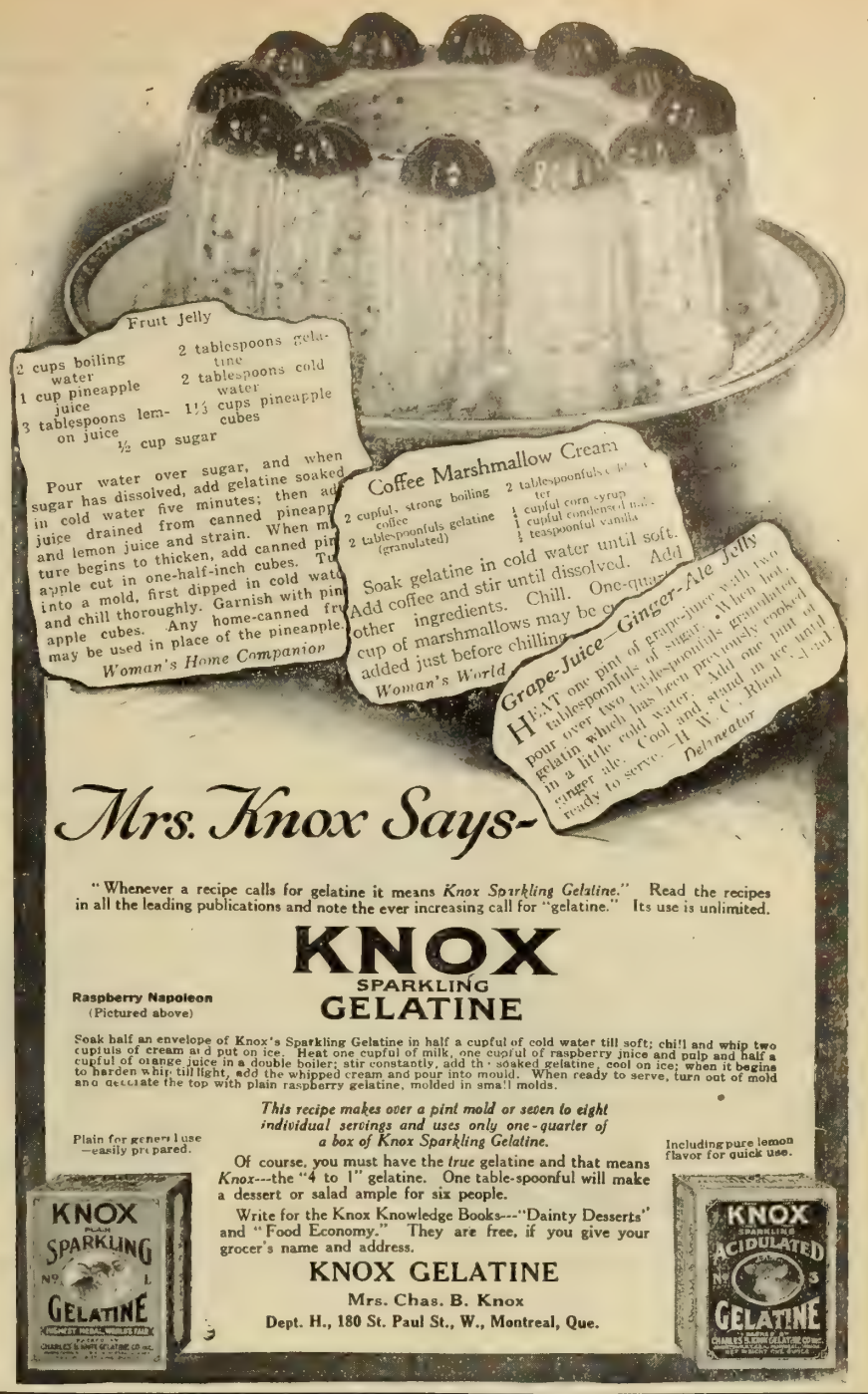
The packing must be of some material through which the heat cannot easily escape. Cork, sawdust, excelsior, hay or shredded newspaper may be used to advantage. Three inches of this packing is put tightly in the bottom of the outside container and around the sides to fill in the space between the outside container and the nest.

A four-inch space is left at the top of the fireless cooker in which a cushion made of unbleached cotton or some other material is stuffed with the packing and placed to make the cooker air-tight. Cut two circles out of the unbleached cotton and a three-inch straight piece to join the circles together. A hot soap-stone, stove plate or brick is placed in the bottom of the nest before the food vessel is placed in the fireless cooker. The food vessel may be any cooking utensil with a top that will fit in the nest after the soap-stone has been put in. Cut a circle of tin or cardboard to fit top of inside of cooker with an opening the size of the nest. This gives a good finish to the top of the fireless cooker and preserves the packing.

Country homes without ice houses and too far from town to have access to manufactured ice may have an iceless refrigerator as a good substitute. This convenience comprises a simple wooden frame with a covering of canton flannel, burlap, Indian-head cloth or linen crash made to fit so that little air is admitted into it. Wicks made of the same material as the cover are tacked on top of each side of the cover and extend over into the pan of water sitting on top of the frame. This water is taken up by the wicks and carried down on the sides of the cover by capillary attraction when evaporation takes place, drawing the heat from the inside and thus lowering the temperature.

Another type of iceless refrigerator which appears more crude can be made for less than two dollars. In this a cotton sack is used for the covering. It might be well to use cotton flannel for the covering instead of ducking because when the cloth is wet evaporation takes place more rapidly.

Assembled material for making a fireless cooker: 1. Outside container; 2. Asbestos or paper for lining; 3. Material for packing; 4. Inside nest; 5. Cooker vessel; 6. Soap stone; 7. Paste; 8. Tape; 9. Cardboard; 10. Cotton for Cushion; 11. Stain; 12. A finished cooker; 13. Top for inside nest.



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Raspberry Napoleon
(Pictured above)

Soak half an envelope of Knox's Sparkling Gelatine in half a cupful of cold water till soft; chill and whip two cupfuls of cream and put on ice. Heat one cupful of milk, one cupful of raspberry juice and pulp and half a cupful of orange juice in a double boiler; stir constantly, add the soaked gelatine, cool on ice; when it begins to harden whip till light, add the whipped cream and pour into mould. When ready to serve, turn out of mold and decorate the top with plain raspberry gelatine, molded in small molds.

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Including pure lemon flavor for quick use.

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The E. B. Eddy Co. Limited
HULL, CANADA
Matches Indurated Fibreware Paper Specialties
B8

ONTARIO WIND ENGINE & PUMP CO. LIMITED

TORONTO

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143-153 University Ave., Toronto.

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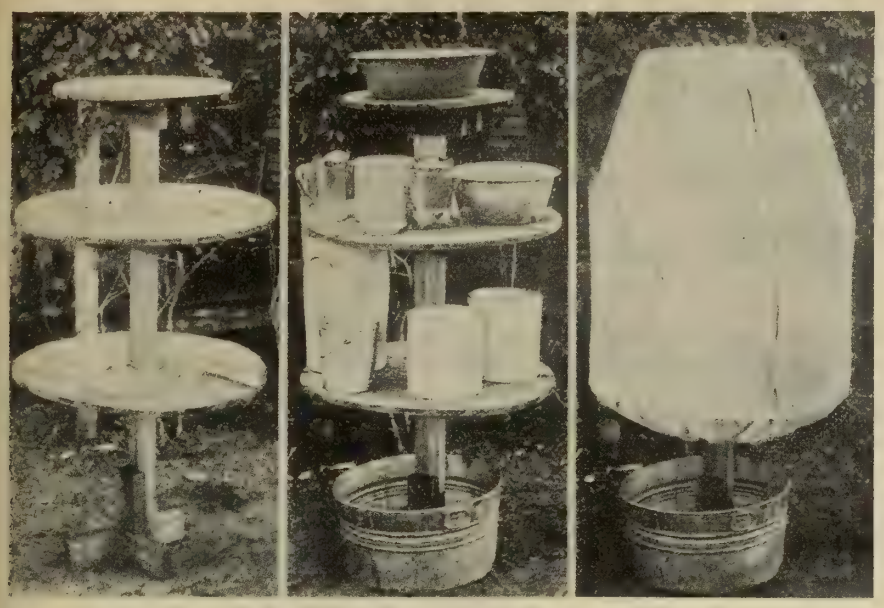

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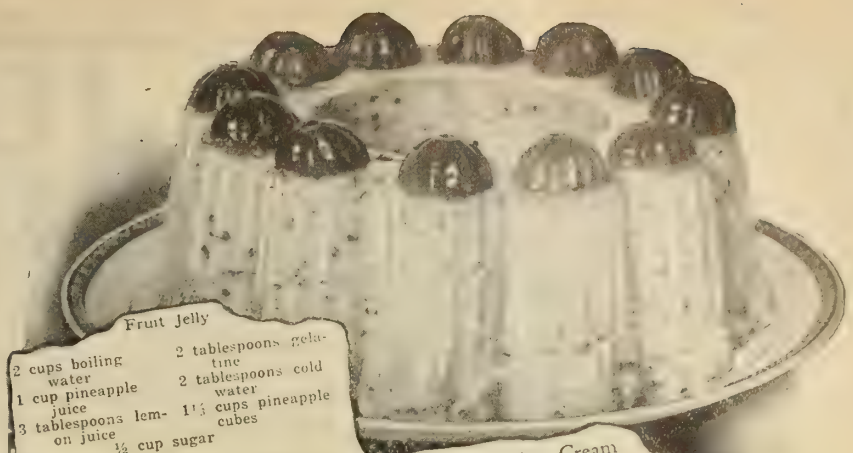

Fruit Jelly

2 cups boiling water
1 cup pineapple juice
3 tablespoons lemon juice
½ cup sugar
2 tablespoons gelatine
2 tablespoons cold water
1½ cups pineapple cubes

Pour water over sugar, and when sugar has dissolved, add gelatine soaked in cold water five minutes; then add juice drained from canned pineapple and lemon juice and strain. When mixture begins to thicken, add canned pineapple cut in one-half-inch cubes. Turn into a mold, first dipped in cold water and chill thoroughly. Garnish with pineapple cubes. Any home-canned fruit may be used in place of the pineapple.
Woman's Home Companion

Coffee Marshmallow Cream

2 cupful, strong boiling coffee
2 tablespoonfuls gelatine (granulated)
2 tablespoonfuls cold water
½ cupful corn syrup
½ cupful condensed milk
½ teaspoonful vanilla

Soak gelatine in cold water until soft. Add coffee and stir until dissolved. Add other ingredients. Chill. One-quarter cup of marshmallows may be added just before chilling.
Woman's World

Grape-Juice—Ginger-Ale Jelly

HEAT one pint of grape-juice with two tablespoonfuls of sugar. When hot, pour over two tablespoonfuls granulated gelatin which has been previously cooked in a little cold water. Add one pint of ginger ale. Cool and stand in ice until ready to serve.—H. W. C., Rhode Island
Delineator

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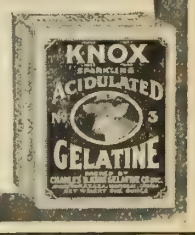

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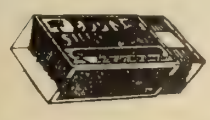

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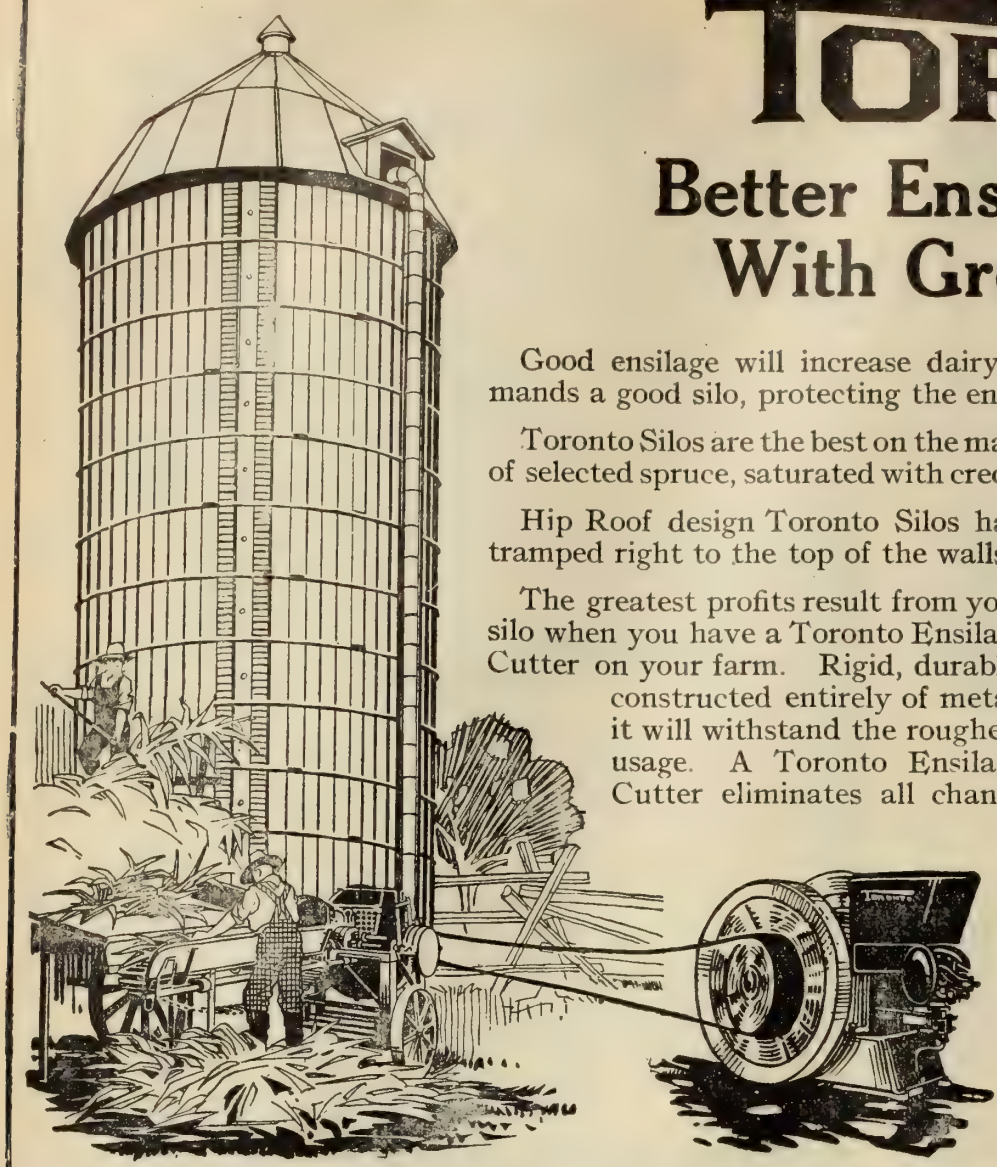

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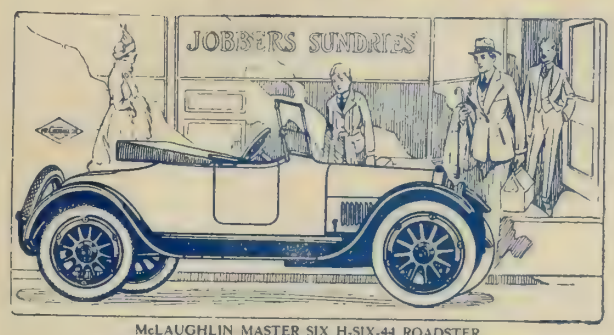
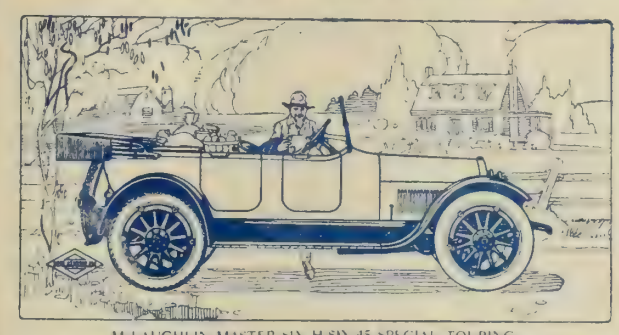
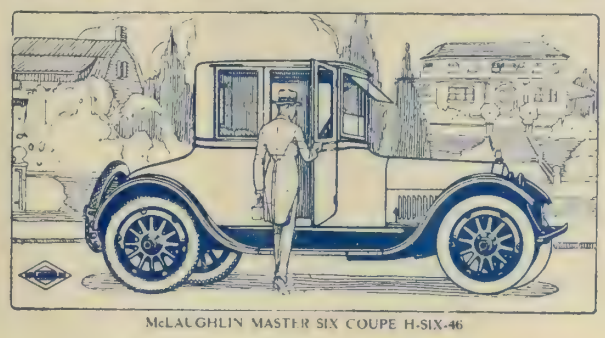
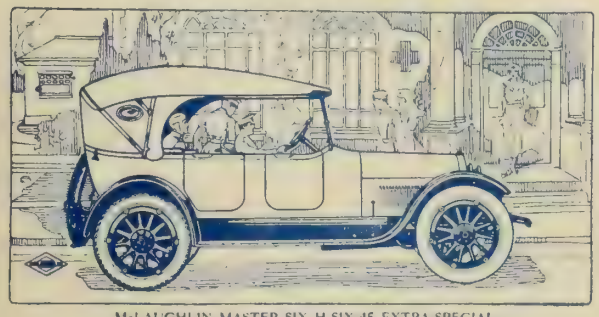
IN NATIONAL SERVICE

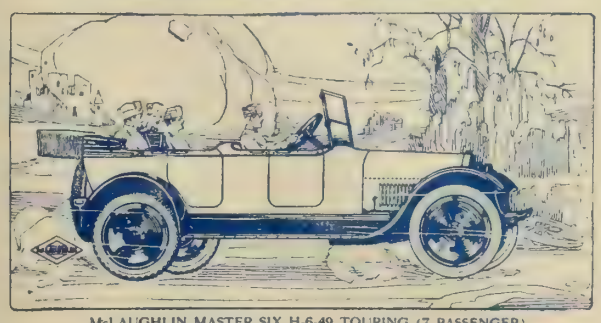


McLAUGHLIN MASTER SIX H-SIX-44 ROADSTER
(The H-Six-44 Special is a replica of this model with Special Appointments)


McLAUGHLIN MASTER SIX H-SIX-45 SPECIAL TOURING
(The H-Six-45 Regular and the H-6-45 Extra-Special are mounted on same Chassis as H-Six-45 Special)


McLAUGHLIN MASTER SIX COUPE H-SIX-46


McLAUGHLIN MASTER SIX H-SIX-45 EXTRA-SPECIAL


McLAUGHLIN MASTER SIX H-6-49 TOURING (7 PASSENGER)
(This Model is being used by Siberian Expedition)

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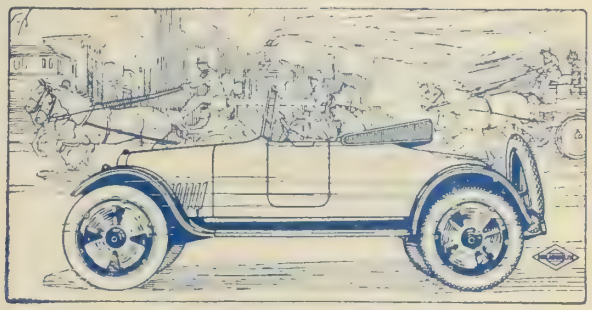
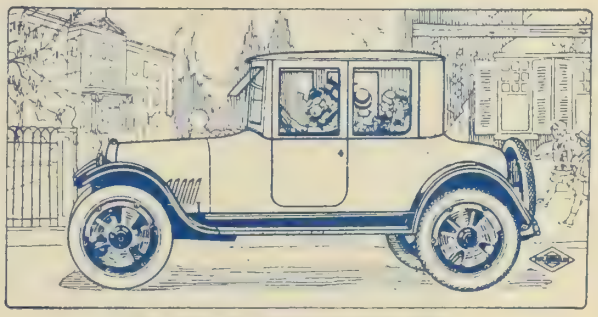
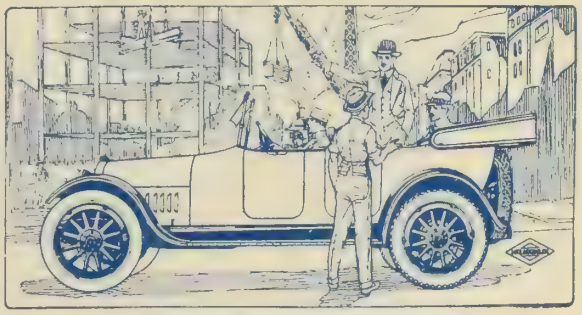
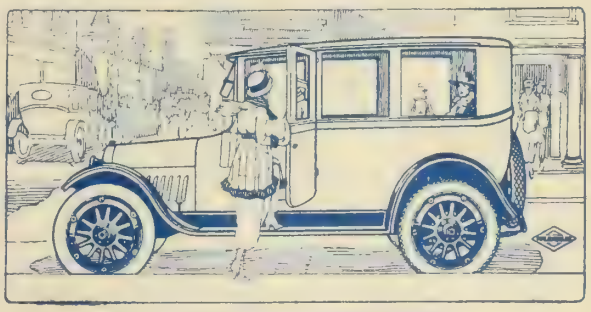
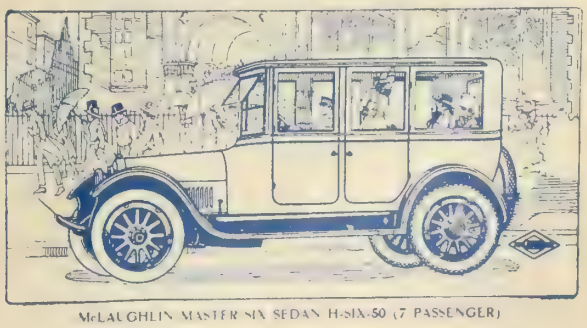

McLAUGHLIN LIGHT SIX ROADSTER H-6-62


McLAUGHLIN LIGHT SIX COUPE H-SIX-62


McLAUGHLIN LIGHT SIX TOURING H-SIX-63


McLAUGHLIN LIGHT SIX SEDAN H-SIX-63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Canada's National Farm Magazine

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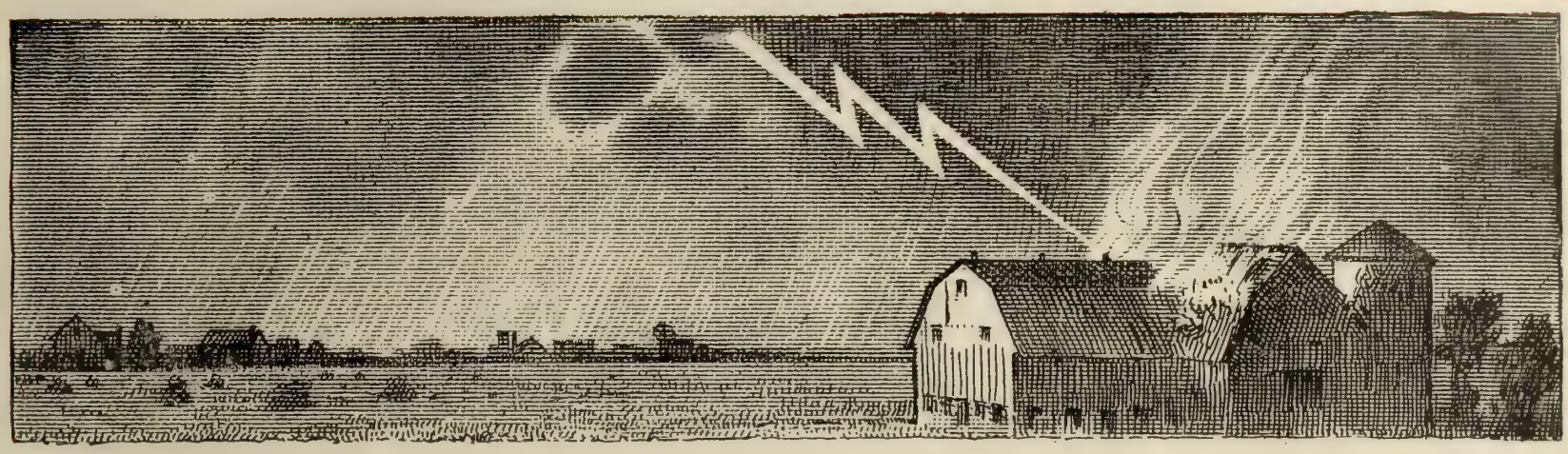
VOL. XII, No. 12 TORONTO, JUNE 15, 1919 $1.50 Per Year 10 Cents Per Copy



Don't Live in Terror of Lightning

Suppose your barn were struck by Lightning and destroyed just before harvest.

You would be put to the loss and inconvenience of threshing in the fields and marketing your grain as best you could.

And if your barn is struck just after harvest, as usually happens, your plight is still worse.

Just last year the loss on Canadian barns struck by Lightning was more than one million, five hundred thousand dollars ($1,500,000.00).

This appalling loss would have been prevented if Metal Roofing had been used.

Lightning has never yet set fire to a building that was roofed with Galvanized Steel, properly grounded. This could not be said of any other roofing material.

Galvanized Steel Shingles are absolutely fireproof—not merely "fire-resistant." They are waterproof and windproof too. No matter how many days it may continue to rain, water cannot leak through Galvanized Steel and cannot soak into it.

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When you put money into a roof make it a permanent investment. If your building is struck by Lightning and you lose thousands of dollars, where then is the economy? Or, if the roof rots in a short time, you will in the end put on a Metal Roof anyway. Roof right in the first place. Better be sure than sorry.

Any of the firms mentioned below will be glad to send you further information. Send the size of your roof for free estimate.

STEEL not "tin"

There is no "tin" plate, such as is used in tin cans, etc., used in Galvanized Steel Shingles or Corrugated Sheets. They are of sheet steel heavily coated with zinc spelter. To call Metal Shingles a "tin" roof is like calling a steel armoured battleship a "tin" boat.

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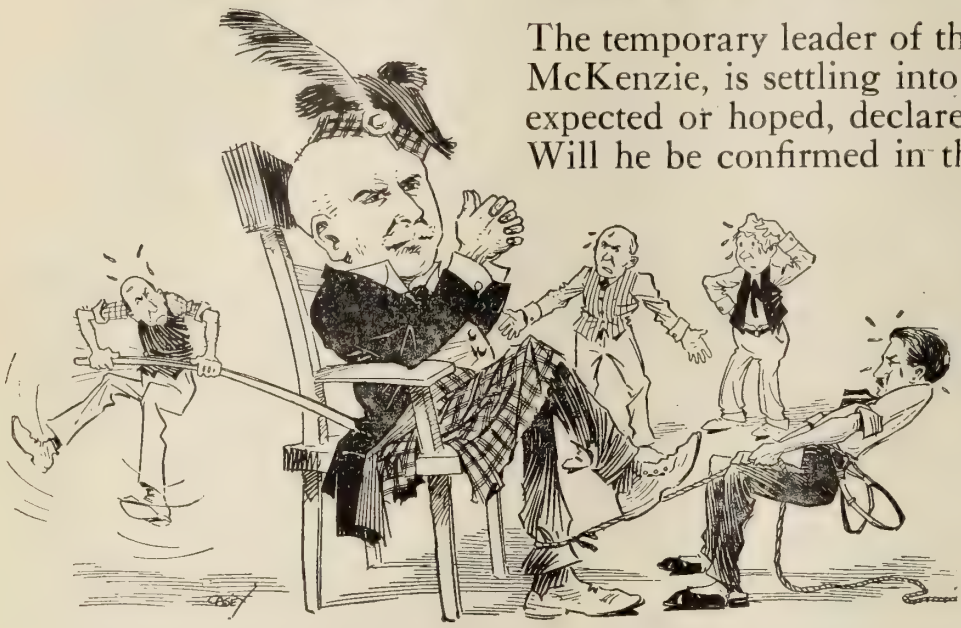
The Pedlar People, Limited. Oshawa, Ont.
The Metallic Roofing Co., Limited, Toronto, Ont.
The Metal Shingle & Siding Co., Limited, Preston, Ont.

Roof with Metal

for safety and permanence

Will D. D. McKenzie be the Next Liberal Leader?



The temporary leader of the Liberal party in the House, D. D. McKenzie, is settling into his new job better than his nominators expected or hoped, declares J. K. Munro, in June MACLEAN'S. Will he be confirmed in the leadership at the coming Liberal Convention? "If anyone is making a book this summer, take a small ticket on Daniel Duncan McKenzie," writes Mr. Munro.

"The Undercurrents" is a pithy and impartial article, giving a great deal of inside information backed up by snrewd forecasts. It is the clearest and most readable review of political events published anywhere in Canada. For instance, did you know—

That a regular old-time Conservative party was reorganized recently at the behest of Hon. Bob Rogers?
That Hon. T. A. Crerar is at present the most potential man in the House?
That D. D. McKenzie is becoming acceptable as a leader to many in the Liberal party?
That Union Government, through force of circumstance, is safely settled in power for some time more?
These are just a few of the points that the inimitable Munro touches upon. Read "The Undercurrents"—it is entertaining and enlightening.

The Best Articles for a Canadian Audience

Here are a few of the other outstanding features of June MACLEAN'S:

"Victory Stuff." By Robert W. Service.
The first of a new series of magnificent war poems by this famous young Canadian.

"The Gold Wolf." By W. A. Fraser.
A remarkable Western story by this well-known Canadian author.

"Solving the Problem of the Arctic." By Vilhjalmur Stefansson.
The third instalment of his official story of his five years' explorations for the Canadian Government, appearing exclusively in MACLEAN'S.

"The Menace in the South." By Agnes C. Laut.
A sensational article on the growth of Bolshevism.

The Best from all other Magazines

In the Review of Reviews Department is found in condensed form the best articles selected from all magazines published the world over. Here are a few of the best in the June issue:

Would Armies Have Been Wiped Out?
Muzzling the Truth at Paris
A Close Picture of Foch
The Reds in New York
A Mysterious City of Rhodesia
Life Beyond the Grave
Will Mohammedanism Disappear?
How Poland Was Saved
When Eisner Was Shot
Who Will Succeed Wilson?
What Future Wars Would be Like
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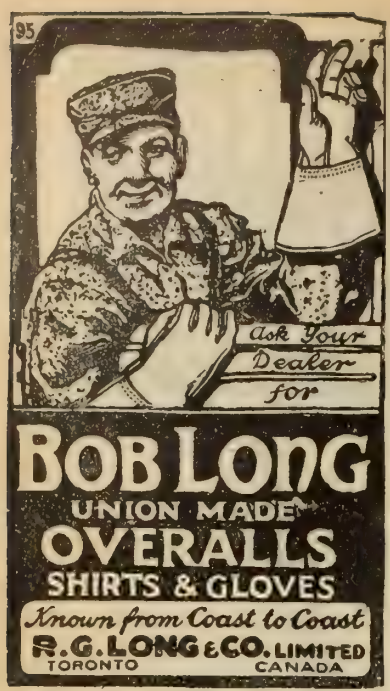

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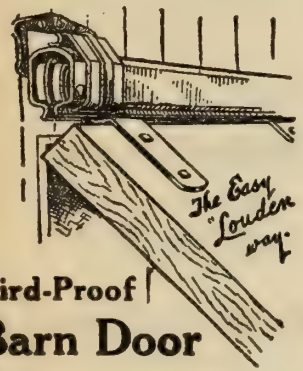

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Canada's National Farm Magazine

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An intelligent agricultural policy is the basis of a great industrial policy, and a systematic effort must be made to bring people back to the land.—Lloyd George.

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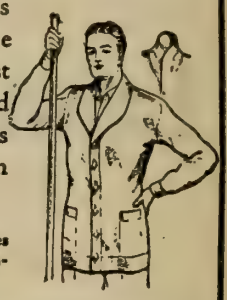

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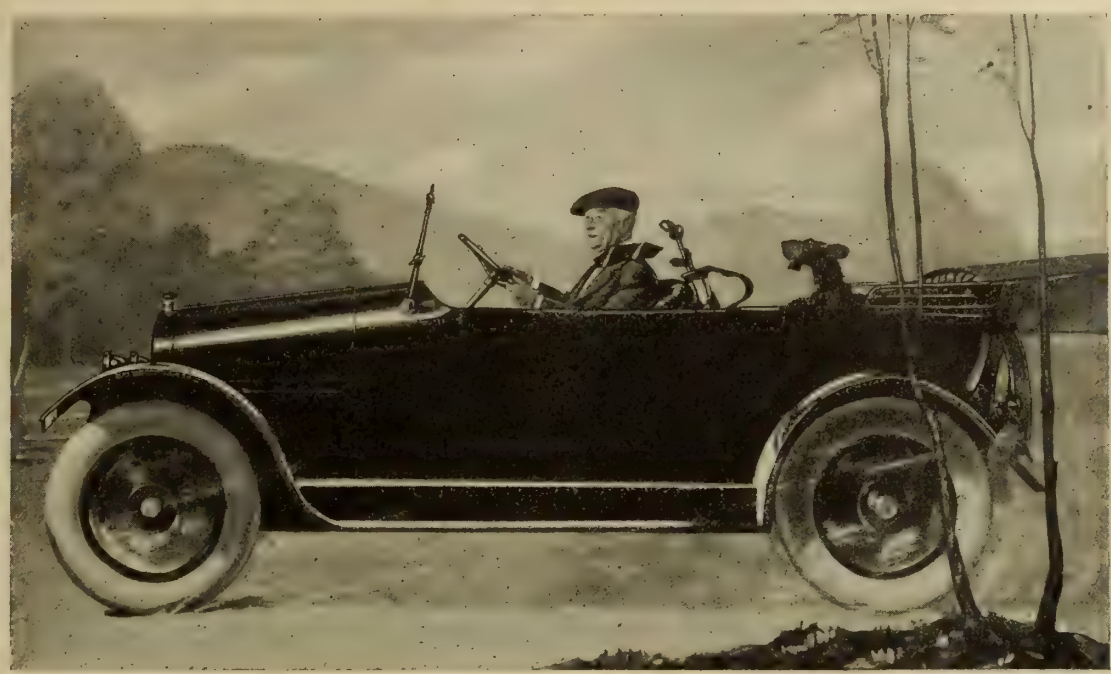

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FARMERS' BUSINESS

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We have helped many over the rough places, and have aided many more to the highest plane of success.

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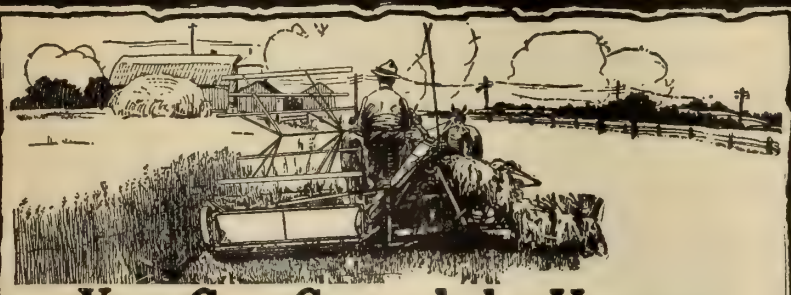

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WHILE you cannot altogether control the size and quality of your grain crop you can control the harvest. For years you have been cheerfully complying with Government request to save materials by repairing your old machines rather than making replacements. Now that the need for this has passed, would it not be real economy to buy new machines and be assured of uninterrupted service at a time when a break-down would mean serious embarrassment and loss.

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Investments & Insurance For the Farmer

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5. A safe depository for savings, large or small, whether subject to withdrawal on call or definitely left for fixed periods, at good rates of interest, and secured by all the assets of the companies.

6. A special place where people, wishing to own their own homes, can either borrow the money to buy them, or else procure assistance to build them, under the expert supervision of the companies' own trained inspectors.

SMALL INVESTOR WOULD BE HURT

LABOR to-day is receiving about double the wages prevailing before the war. The cost of living has increased almost as much. But interest rates have not generally increased. Therefore, while the worker is quite able to meet the increased cost of living, investors, dependent on the savings of past years of labor, must exist on what amounts to approximately half the former income from the standpoint of buying power, says *The Financial Post*. Likewise the salaried class, representing that important connecting link between capital and labor—management—and other unorganized employees have failed to share as fully as the union worker in the advance of wages and stands to bear, in a large degree, the brunt of the present crisis.

If organized labor by the force of the one big union and the sympathetic strike takes more than its fair share of the profits of production, not only will capital suffer—and in suffering withdraw and curb industrial opera-

—From "Passing Show," London.

NURSE'S AFTERNOON OUT.

"Now, children, you must all of you be good till I come back."

tions—but the small investors will be cheated of the fair valuation of their savings from past years of labor by the inflated cost of living, which will become permanent. Likewise salaried management will be forced to take less and initiative in organization as in promotion will be discouraged. Such conditions can eventually prove nothing less than a boomerang to the great mass of the people.

ANYTHING WORTH OWNING IS WORTH SAVING

PAINT, as has often been said, serves more than the mere purpose of decoration. Its principal value lies in the fact that it prolongs the life of the surfaces painted. Wood and iron, on exposure to the air, undergo a slow process of oxidation which just as surely destroys them as though they were set on fire, the difference being the speed at which the reaction occurs.

We take out insurance to cover loss by fire and should just as surely put on paint to cover loss by decay. It takes very little calculation to discover the apparently astounding fact that the loss through lack of painting is greater than the loss by fire. When the farmer comes to a full realization of the true reason for painting there will be no need for urging in the matter. Paint not only conserves but enhances property values.

We are fast becoming a nation of travelers, largely by reason of the innovation of the automobile. We travel with ease and comfort along roads never dreamt of, leading us through cities, towns and villages that we hardly knew existed and how often we find ourselves as we pass through a farming district, judging as to the character and standing of its people.

How different one feels when approaching and passing through a township, where the homes show the lack and need of painting, the invariable result being decay and disintegration of that which might have been a substantial asset against the day of necessity. The impression formed is that of pity, if not disgust, that any individual or community should show such a criminal disregard of the value of preserving and beautifying that which they have permitted to advertise themselves as "shiftless" and lacking in all principles of economy.

There is no better index of the character and solidity of an individual or community than the condition of his or their properties. It shows thrift or lack of it and where thrift abides and is practised there you will find intelligence and prosperity.

THE GOOD FORM OF INSURANCE

ONE of the best forms of protection for your family is that which will perpetuate, for their care and maintenance, the same conditions as prevail during your lifetime. A legacy which after your death would offer an exact substitute regular and unfailing —for the monthly household allowance now provided out of your earnings, would be ideal. It would permit of the financial part of your family's affairs being carried on after your death without serious change.

It is because a monthly income policy enables you to provide just that sort of legacy that we say it is the best provision you can make for your dependents. Let us explain.

Under a policy of this kind the Company guarantees to pay to your wife, immediately at your death and regularly each month thereafter, the amount of monthly income you decide upon at the time you apply for the policy.

And the company further guarantees to make all these monthly payments even though you should live to make but one deposit.

Could any protection be more definite—more complete?

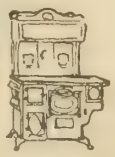
Farmers could well afford to inquire into this kind of insurance.

As good as McClary's

That is the measure of a stove or furnace in Canada. That is the best that is ever said of the *unknown* article —It is *as good as McClary's*. Then, what safer course could you follow than to buy the thing you *know*—McClary's.

The McClary's reputation for quality was not earned in a day. The McClary's institution, the largest of its kind in the British Empire, has been over seventy years in the making.

McClary's stands high among the great names in Canadian industry because it was never attached to an inferior article.



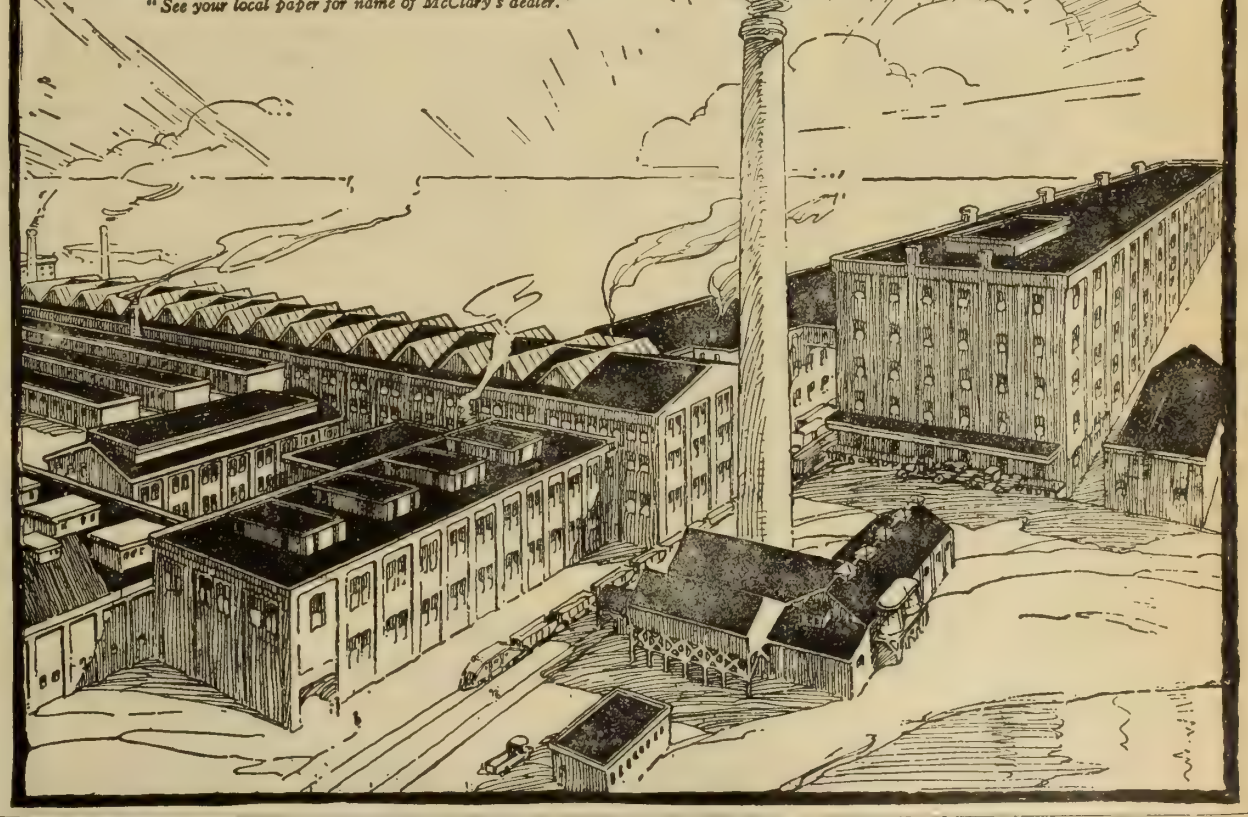
Whatever fuel you may wish to use, whatever type of stove, range or heater you may desire, you will find one bearing the McClary's nameplate. Isn't it worth your while to seek it? Isn't it worth your while to consult McClary's on the subject?

Any of this list of Booklets on heating or cooking will be sent, if you mention this paper.

"Service from the Kitchen"—about the Kootenay Steel Range.
"Magic of the Pandora"—about the Pandora Cast-Iron Range.
"Comfort in the Home"—on heating with the Sunshine Furnace.
"Satisfaction"—dealing with McClary's Gas Ranges.
"McClary's Electrical Appliances"—on cooking with electricity.
"Household Helper"—Canning Edition—describing McClary's Florence Automatic Oil Cook Stove.
"The Story of a Range"—McClary's Simplex Combination Coal and Gas Range.

McClary's London, Toronto, Montreal, Winnipeg, Vancouver, St. John, N.B., Hamilton, Calgary, Saskatoon, Edmonton. 22

"See your local paper for name of McClary's dealer."



Cream of the West Flour

—the hard wheat flour that is guaranteed for bread

The high gluten flour prized for splendid big loaves of delicious, nourishing bread. Ask for it at your dealer's.

The Campbell Flour Mills Company, Limited, West Toronto 156

ANNOUNCING

A Price Reduction on Goodyear Automobile Tires and Tubes

Effective June 2nd

The following is the new schedule of retail list prices on some of the popular sizes of Goodyear Automobile Tires and Tubes to apply on and after Monday, June 2nd, 1919:

Cut out and preserve this list

SIZE	GOODYEAR FABRIC TIRES		GOODYEAR CORD TIRES	GOODYEAR TUBES	
	Smooth Tread	All-Weather Tread	All-weather and Rib Tread	Regular	Heavy Tourist
30 x 3½	$20.70	$22.25	—	$3.25	$ 4.00
32 x 3½	22.40	24.65	$45.20	4.30	5.25
31 x 4	31.15	34.25	—	5.35	6.50
32 x 4	32.95	36.25	57.50	5.55	6.75
33 x 4	34.80	38.30	59.00	5.70	7.00
34 x 4	36.05	39.70	60.50	6.00	7.25
32 x 4½	42.80	48.20	64.70	6.95	8.50
33 x 4½	44.05	49.55	66.45	7.20	8.75
34 x 4½	45.90	51.65	68.20	7.30	9.00
35 x 4½	48.15	54.15	69.80	7.50	9.25
36 x 4½	49.20	55.30	71.50	7.75	9.50
35 x 5	55.90	64.25	84.75	8.85	10.75
37 x 5	59.25	68.15	88.65	9.30	11.25

Additional information can be had from any Goodyear Service Station

How "Made-in-Canada" Saves You Money

Because Goodyear Tires are made in Canada you save the high import duty. This chart shows the saving on some popular sizes.

Size	Price if Imported	Goodyear Made-in-Canada Price	Saving to Canadian Motorists
30 x 3½	$28.50	$22.25	$ 6.25
34 x 4	48.59	39.70	8.89
33 x 4½	62.49	49.55	12.94
34 x 4½	64.48	51.65	12.83
35 x 5	79.16	64.25	14.91

FARMERS' MAGAZINE
CANADA'S NATIONAL FARM MAGAZINE
Volume XII TORONTO, JUNE 15, 1919 Number 12

The Farm Chicken is Roosting High

Fifty-cent Eggs in May Helped — By ELUID KESTER

THE Canadian hen is attracting much attention at the present time. A record of 50 cents a dozen for eggs in May has put Biddy into the limelight again. That she is bound to roost high during the next year is certain. Eggs going into public and private storage at this price, means that there is no sign of lower prices for another year at least, although there may be recessions here and again.

The average hen on the farms of Canada lays about 100 eggs a year. Many flocks recently bred from bred-to-lay strains put out by the enterprising trap-nesting private breeders, and from the stock produced at the O. A. C., where Dick Graham and Frank Marcellus have been doing things with hens for years, do better than this average. Doubtless in Ontario the average will run up over 125 and many flocks surpass the 200 mark. In fact the 200-egg hen is a live possibility on every farm, and 50-cent eggs puts the pep into many a farmer regarding strains and breed values. There is poor excuse for keeping a boarder hen on the place just because she is an old hen, any more than there is for keeping any non-productive animal. Especially is this so when even an old White Leghorn hen will bring $1.50 on the food market. For $1.50 is better in the pocket than a $2.00-wheat-eating machine on the roost.

Young chickens are growing fast on many farms. Incubators, brooders, and old clucking hens are all doing duty. The hatches have been fairly good. Cold wet weather did seem to cut down the fertility percentages some, but the farm woman generally sticks to it until the yard is tolerably well stocked with the fledgling youngsters. And what is more attractive than a bunch of Rhode Island Reds, of Plymouth Rocks or White Leghorns? For these are the breeds that seem to dominate the Canadian farm yard. There are perhaps more Plymouth Rocks in Ontario than there are of all other breeds. The inquiries at the O. A. C. are fully 75 per cent. Rock. And as a farm producer this speckled biddy cannot be beaten. She is dual-purpose. She lays well, raises ideal broilers, and when she goes to the pot, there is a splendid meal for a big hungry family.

This does not discount in the least the other breeds of chickens. White Leghorns are a big competitor for popular favor. Because of their white plumage they always advertise their presence. They are active, good foragers, and lay a big white egg. Besides this, they are not a setting breed. These are sterling attributes to attract the money-maker's attention.

The Rhode Island Red has been making many inroads upon the farms of the country because of their winter laying qualities. They are a big, active fowl, make good eating, lay a brown egg and make some good records. As a writer in our Poultry Department from Saskatchewan says, these hens are ideal winter layers, feed and attention being big factors in their returns.

The average farmer has little trouble about correct feeding rations where his flock have a big run of pasture and orchard. These are ideal conditions but there are hundreds of flocks where limited range and constant attention in dietary matters make the question one of more consideration.

No matter how carefully one's birds are mated and bred, if proper growth and unhindered development are not assured in the offspring they will not develop to the fullest extent those desirable traits which they have inherited from their parents. Hence improvement through breeding must be accompanied by proper growth. This applies equally to the fancier who is breeding for perfection of plumage and to the producer of high-quality table poultry. The problem of the breeder is to handle and care for the growing stock during the summer so as to insure a uniform, continuous growth and development from hatching time to maturity.

Dr. E. V. McCollum of Johns Hopkins University has brought it to the breeders' attention that animals will not grow normally on a diet of whole grains alone, such as corn, wheat or oats. These feeds are known to be perfectly wholesome and good, yet when an animal is restricted to them it simply cannot grow. The complete studies, including all kinds and types of feeding stuffs, have demonstrated that there are certain unknown properties about some feeds which give them the power to make the young animal grow and develop normally. These properties have been termed vitamines.

What is of special interest to all poultry feeders are the available sources of these products. They are found in milk, in the yolks of eggs and in the green leafy parts of plants. These three feed products have been termed by Doctor McCollum *protective feeds*, because they are so constituted as to make good whatever deficiency exists in rations composed of seeds, by-product and roots, with or without meat.

There are two distinct types of substances which exist in these protective feeds, both of which are essential to proper growth and development. The first substance is found to exist in butterfat and egg yolks, and the effect of its presence or absence has frequently been demonstrated by feeding young animals for a certain period on normal complete rations containing these products, during which time they will grow normally. If, however, all butterfat or egg yolk is withdrawn from the ration, growth stops immediately. The tissues round the eyes soon become swollen; within a few days the eyes will be entirely closed, and within a few weeks, if this deficient ration is continued, the animal will die. If at any time within

Continued on page 48

WHY EGGS ARE HIGH

THERE *has been a heavy export of Canadian eggs to Great Britain since the armistice was signed. The exports from March 1st to May 31st from Canada numbered 1,021,440 dozens. At the same time the exports from the United States to Europe showed a big increase. As was explained by Mr. H. S. Arkell, as reported in the last issue, Canadian eggs are gaining in favor in Great Britain because they are produced in a cool climate, and are graded well. It is noticeable though that Irish eggs carry the highest prices of all. Canadian stocks of poultry have been somewhat reduced during the war. High prices of feeds also hinder some expansion. Canadians, also, are becoming great consumers of eggs and poultry.*

These facts all contribute to the record May prices received by farmers. Prices will likely be good for some years and the farmers will be wise in keeping in touch with this source of revenue. The poultry business has perhaps numbered more graveyards than have the other forms of farming adventures, chiefly because nearly everybody thinks he can feed hens, and uses the multiplication table to his undoing. But the farm has a decided advantage over the backyard.

Fully 75 per cent. of the farm chickens of Ontario are Plymouth Rocks. A bred-to-lay bunch that produce results.

The TONE *of Our* COUNTRY HOMES

By ETHYL MUNRO

FOR a long time, one of the great causes taking people from the country was the tendency of progressive people to move to town, that they might have advantages for their families. During the last few years the order of things has been reversed. People who want the best for their families are staying on their farms and bringing the advantages of the town to their country homes.

A half-day's travel through practically any well-settled district of Ontario would show more than one farm home where it is being proved that any worthwhile home convenience or comfort to be found in the most up-to-date city house is possible on the ordinary well-to-do farm. It would show the misinformed manufacturer that while he has been trying unsuccessfully to get on the market a grade of cheap furniture or vehicle or clothing to suit the farm trade the farmer, on his purchasing trips to the city, has passed his plant on the way to a quality store, driving a fairly good car and wearing a tailored suit and a panama. It would teach the social missionary, deploring the lack of refinement in farm homes, that the atmosphere in a home on a back concession may be of a quality she would be glad to carry back to her own house, on the avenue.

Suppose we take for consideration three farm homes in Western, Central and Eastern Ontario, with different environments and different natural resources. They are not the homes of men who make their money in some other business and run the farm as a pleasurable side-line. They are homes built on the farms which support them and where the farmer and his family are active members of the working staff.

IN the county of Haldimand is a farm which has been in the family for two generations. The house is not new but it is a handsome brick building whose charm has been enhanced by the years' growth of trees and vines and shrubbery. There is a certain sentiment for the family, too, in the fact that the woodwork and floors are of hardwood grown on the farm. With this regard for old things is combined a very modern way of living. The large living-room and dining-room are always flooded with sunlight and fresh air; the furniture is of oak and leather, built for durability and comfort, the decorating is of the kind planned for restfulness and artistic beauty, the piano is a baby grand. There is nothing superficial or there for show, but they seem to set a premium on quality. After all, it has always been appreciated that there is a certain genuineness in country life.

But someone says, "It is easy to build a good house anywhere and to furnish it well if you can afford it. We have seen lots of fine, big farm houses with expensive plush parlor suites and carpets an inch deep and spare bedrooms with walnut and mahogany and a bed as white and puffy as a snow bank. The trouble you can't get over in the country is the impossibility of the necessary conveniences like running water and bathrooms and furnace heating."

This farm is as far removed as any other from municipal help in this regard, but a windmill pumps water from a well in the yard to a tank in the attic of the house, the overflow going from here to the barn. If the wind doesn't blow a gas engine does the pumping. There are gas wells on the farm as there are on other farms in the district, and gas is used for cooking and for burning in the furnace and grates. It was also used for lighting for several years, then the gas-engine was connected with a dynamo and storage battery to give electric lighting in the house.

This is a dairy farm, so it is a busy place requiring considerable hired help. Some years ago, when it was possible to get help in the farm home at least part of the time, the hired men were boarded in the house. Later the owner decided that the only way to relieve his wife of this extra work, as well as to get steady, year-round men, was to hire married men and give them houses of their own. Accordingly a double house, a very attractive building of frame and shingles, was put up across the lane to accommodate two married men and their families. The separate housing of the hired man and his family, which is fast becoming a general practice on farms where hired help must be kept the year round, may be an economic necessity but it is no less important as a social movement in the way it preserves the privacy of the family's home life. The changing customs in the education of farmers' daughters is another new influence. The girls in this family are accomplished musicians, which may be the reason for the baby grand. Added to their home training in practical housekeeping and the natural experiences of a girl growing up on a farm they have had courses in a ladies' college, which may explain other pleasing touches besides the pennants on the walls.

Stairway and library corner off the living-room in a farm home.

Fireplace nook with built-in bookcases in the home of Fred Green, Ontario county.

WHEREVER an electric power-line goes through a farming district the homes of that district seem to automatically take on every convenience to be found in the best city home. They usually go even a little farther in using electricity for housework because there is more housework to do. Washings are heavier; there is more cooking to be done, especially in hot weather; it pays to install an electric washing machine and iron and cooking appliances. Also where power is paid for at a flat rate it often costs nothing more to use as much as you like in the house.

A farm home in York county illustrates what is being done in many districts where power lines have been put in. The house had been built before there was any promise of electricity coming near the place so it had to be wired afterwards, as is the case in most homes in the old settled communities.

With the lighting system installed they began to set electricity doing other work around the home. It might have been used to pump the water, but they already had a little gasoline engine in the cellar doing that. The system is very complete. It is of the Kewanee type with two compression tanks, one for hard and one for soft water, the water being forced to the kitchen and the bathroom upstairs. There is also a hard water tap in the dairy room at the foot of the cellar stairs, and taps for hot and cold soft water in the laundry-room in the basement. The water is heated from a furnace coil when the furnace is going, and at other times in a water-front on the kitchen range.

The first piece of power machinery installed was an electric washer. It was set up in the laundry, a cement lined, whitewashed, well-lighted room in the basement, with stationary tubs supplied with hot and cold water faucets. A cook-stove, discarded from its original purpose, is used here for boiling the clothes. An interesting feature of the arrangement is that the work tables built around the wall are six inches higher than the average working surface, which is always so low as to unnecessarily tire a woman of average height—unusual consideration has been taken to make the work as easy as possible for the housekeeper. The same idea is carried out in having the washer set directly over a drain, so that there is no lifting and carrying of waste water.

After the washing machine came an electric iron, a combination vacuum cleaner and sweeper, and a one-cover cooker which is regularly used to make toast and cook bacon and eggs for breakfast. When we visited the place they were not using an electric stove, but were very kindly disposed to one of the fireless-cooker type belonging to a relative on a neighboring farm. A happy circumstance in connection with all this is that the cost of the power required to run this equipment, to do the lighting, washing, ironing, "vacuum cleaning" and part of the cooking for a family of five averages just about two and one-half dollars a year.

There are other devices not operated by power, which could be had in any farm home and which go a long way to lighten the housework. The dumb waiter, and a similar elevator to carry wood up from the basement woodshed, save an appreciable amount of energy every day. The built-in cupboards, kitchen cabinet, refrigerator and airy, ventilated cellar-cupboard of shelves, boxed in with wire screening, are all evidences of what mechanical skill can do to put the work of the farm housekeeper on a level with that of the woman in the city or anywhere else.

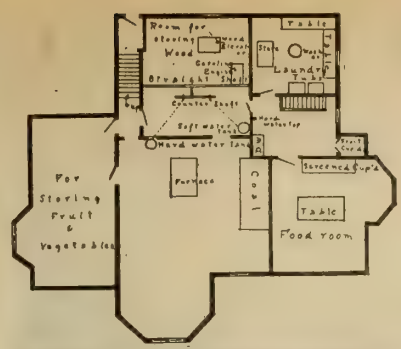
Among the homes where the refinement of country life is being developed, consider one in Ontario county. This house is a beautiful, new, semi-bungalow, of buff brick to the second storey, and finished with stained brown shingles. The owner and his wife planned it themselves and it is decidedly built to live in, to enjoy and to be proud of. The woodwork in the hall, parlor, and dining-room is panelled in mahogany and birch, with ivory base-board and window trimmings, giving one of the most handsome effects to be secured in indoor finishing. A charming feature of the parlor is the fire-place nook at the end of the room. The fire-place is built of soft-toned yellow brick with mahogany bookcases built in at either side. The architectural ingenuity in using the space walled out to make this nook can be seen in the plan. It is divided into two little closets which open from the hall, one fitted with shelves for a magazine room, the other with a wash-bowl and faucet and shelves and hangers for a coat room. Another bookcase is built in the space un-

Home of Fred Green, showing the rose garden.

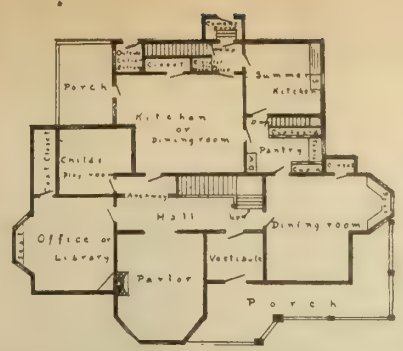
Ground floor plan of the Green home.

First floor plan of the Green home.

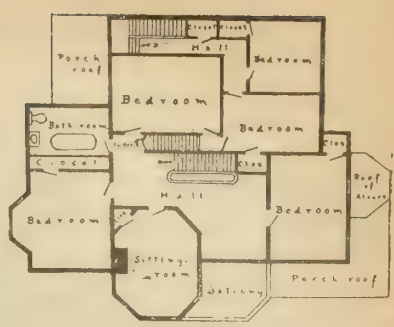
The home of John Neilson, York county, Ontario.



Arrangement of the basement showing the power equipment, pressure tanks and the separate rooms for furnace, laundry, vegetable storing and pantry.



Ground floor plan of the Neilson home.



First floor plan of the Neilson home.

der the stairs—it is necessary too, for the family library consists of something over a thousand volumes.

The same combination of charm and cheerfulness is carried out in the dining-room; there is another brick fire-place here, the same arrangement of windows and casements, the same oak floor and mahogany woodwork with furniture of walnut and leather and some valuable antique pieces. A collector of valuable old furniture wouldn't pick up much in the country now—the country people have learned to prize it themselves. In this home they have a fine collection of old willow-ware, a home-made china cabinet attached to an old walnut sideboard, a serving-table made from an old walnut table and a mahogany chair carved from an old church organ.

And the aesthetic and cultured interests have not thrived at the expense of practical convenience and comfort. The house is not in touch with a municipal power supply, but an ideal service has been developed from the natural water-power on the farm. The owner has a mill, and the water from the pond which turns the mill-wheel also supplies power for a dynamo, giving the house electric light, an electric washing-machine, iron and vacuum cleaner. The electric washer is placed in a laundry room in the dairy building, and the steam engine which supplies power for running the churn and searator also furnishes hot water for washing and steam for boiling the clothes.

The water system with the house is also after an original plan. A cistern drawing the water from the roof of the barn supplies the soft water. The barn is built on ground considerably higher than the house, and the level of the cistern is sufficiently high that the water pipe from here to the house is forced to the bathroom on the second floor by simple gravity. No storage tanks are necessary. Should the cistern go dry, water from the mill race, which is also above the level of the house, will supply soft water. (The hard water comes from a spring at the back of the lawn.) The two lines of pipe from the race and the cistern are connected in the cellar and it is only necessary to open or close a valve to tap which ever pipe is desired.

In providing for heating the same forethought was taken in building the house. A hot water system was installed by which the temperature can be regulated to a degree, but the fact was not overlooked that a hot water system makes no provision for ventilation and that no heating system is proof against accidents, so they have fire-places and thimbles in the chimneys so that stoves could be used in case of emergency.

The farm will always be a fairly busy place. There is a certain amount of work that must be done by the farmer and his family themselves, but the leading farm homes of Canada are showing that this need not lower the tone of the home life or cramp the cultural interests. We might mention the girl who takes most of the responsibility of the housekeeping for a family of eight, and who sets the table for a company supper entirely with her own hand-painted china, or the home where we were entertained for an hour by two little tow-headed, blue-overalled boys keeping the phonograph going with one record after another from the world's best artists and enjoying the music very well themselves; but the great promise for the future is not in these individual cases—it is in the general forward tendency of the average farm home of which they are indications.

What FRUIT PRICES *will* PREVAIL

By COLIN W. LEES

THE high returns to the B. C. fruitgrowers of the past two or three years have given courage to the grower and acted as a stimulus to better farming. No time or expense has been spared to put the orchards in the pink of condition and the result is that to-day they are in better all-round shape than at any previous time in the history of the industry in this province. More cultivation, more fertilization and more spraying have been done than is usual, and the pruning was carried on with a care and thoroughness never so universally apparent in the lean years of the past.

Hence the orchards are in shape to produce a bumper crop. The bloom this year has given promise of the heaviest crop that the valley has yet produced and as the weather has been favorable the set will not likely be disappointing.

Much speculation goes on as usual as to the prices, but the consensus of informed opinion seems to be that for soft fruit last year's prices will pretty much prevail. Cherries will likely bring more money this year as the cherry returns in 1918 were not satisfactory owing to a breakdown in the strategy of the selling agencies. After the frost of May 24th, word went out that the cherries were all gone and the prairie jobbers bought heavily south of the line to protect their trade. The result was that with our yield, which was not materially reduced by the frost, and the supply from the States, the market went fluey and many growers and shippers lost heavily on their cherry deals.

Peaches will bring a good price as the supply is now, owing to the destruction of so many trees by the growers in keeping the price up, as the market in October Apricots may be a little easier than a year ago and plums and prunes may be lower as the American crop was last year taken by the Government for the troops.

I expect to see apples higher than they were in 1918, and the crop is sure to be larger. The export market will be available and the exceptionally high prices now being paid for storage apples, with the completion of extensive storage facilities in the Valley, will be factors in keeping the price up as the market in October and November will not be called upon to take everything from McIntosh to Ben Davis as in the past.

I have just returned from a motor trip through some of the other fruit-growing districts, and on all sides one hears words of higher quotations. The Washington growers who still have Newtons are holding them for $4.50 f.o.b., and nothing is being quoted for 1919 below $3.00. Any quotations that have already been made, either in the States or B.C., are considerably in advance of last year so that the prospects are decidedly cheerful.

Against the promising yields and expected high prices are the high price of everything the grower has to buy and the ruinous price of paper, box shook and nails. Also the packing house help is demanding high remuneration, but the high demands for farm labor do not materially affect the small grower on 10 acres who does his work himself.

Though the sky is clear, three small clouds are on the horizon. The first is the demand of the express companies for an increase in express rates on fruit amounting in some cases to 200%, which, if granted, would put the fruit industry in this province on its back with its toes to the sun.

The first mention of these demands by the companies threw the growers into consternation, but the latter's able presentation of their case before the Railway Commission at its Vernon and other B. C. sittings, and the light that has subsequently been let in on the earnings of the express companies, have encouraged the growers to believe that the demands of the transportation companies are just another attempt of the rich to get richer at the expense of the poor, and there is now little expectation that Sir Henry Drayton and his colleagues will grant more than a very small percentage increase.

The second cloud is the subtle attempt that rumor informs us is being made by the organized grain growers to have the duty on fruit abolished or at least reduced. One hesitates to place too much credence in such a report when the grain growers are asking for that most extreme form of protection—a fixed price for wheat; and when the Alberta farmers have petitioned, not for a duty on margarine, but for the complete abolition of its importation. Besides, the grain growers are making a determined effort to do business with the B.C. farmers and are establishing warehouses throughout the Province. This is as it should be, for we have no quarrel with the prairie producer and hope never to have one, but we certainly do not expect him to use the profit he makes off his sales to us, to carry on a lobby at Ottawa, with the intention of doing us an injury.

And yet it must be understood that many growers place little store in the protection fruit enjoys. Last year Okanagan apples went into the highest priced American markets and successfully competed with Washington and Oregon. If the duty on apples is altered we want it entirely removed, which will then result in a full measure of reciprocity with the States, and thus remove the barrier that now exists between us and the best markets, where our fancy grades are admitted to be the superior of anything grown on the American continent.

The only benefit—and it is a real benefit—that we receive from the tariff is not that it makes a higher price possible, but that it prevents the dumping of a lot of trash on the Canadian market. The prairie dweller now gets good fruit at a fair competitive price. Remove the duty and he'll get junk and the high-class stuff will go to Chicago, Philadelphia and New York.

The third cloud is the lack of cannery contracts for tomatoes. Last year at this time we were all signed up at $20 a ton, while up to the present the writer has not heard of a single cannery contract for 1919. There seems to be no demand. However, the explanation may not be far to seek. Canned goods are reported scarce with stocks depleted and prices high, why then should there be no demand for cannery toms?

Let us consider the situation. Every small independent cannery and quite a few that were not so small are reported to have been purchased by one large canning concern or its subsidiary company controlled by it. So the probability is that this company is holding off until the optioning and consolidating of all the local factories is complete and until the grower is mighty anxious to accept any price he can get for his cannery stock. Then the plutocratic cannery man will come around with his starvation price and you can take it or leave it, but no other offers will arrive. Thus the danger seems to be not that there will be no outlet for the crop, but rather that the price will be low. In any case, a large acreage is going into tomatoes.

The present year will see a continuance of the efforts of packers and inspectors to improve the pack and secure uniformity in all fruit shipped out. Of course this applies particularly to apples. Last year many inexperienced packers were employed owing to

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CAN CANADA GROW FLAX?

By THE EDITOR

FOR years Canada has been growing flax for its seed. Prairie farmers have reaped many a paying crop and varying fortunes have been made from the seed. At the same time thousands of straw piles on fire marked the growing areas in number. It seemed like a reckless waste. For flax straw carries a fibre that has for all the ages served man in his fine linen needs.

It remained as one of the war's readjustments, that fibre flax growing in Canada was seriously undertaken. The destruction of the industry in Russia and in Belgium where the world has heretofore been getting its best fibre, opened up the Ontario possibilities and hundreds of acres have already proven that good fibre can be produced in certain parts of that province. As many as 35 or 40 companies are this year raising flax, having an estimated acreage of 20,000. The crop is being produced under a definite price per ton basis to the farmer who carries no worries about the harvest and care of it.

Certainly then Canada can grow flax. But to grow it, there must be a market that will furnish a constant demand. Will such a market prevail? If so, Canada will produce the flax.

Ireland has been age-long famous for her manufacture of linens. The flax fibre has been imported and made into thread and into fabric there. Other small mills have been buying their thread and carrying on a linen business in a small way for years. In Canada, there are about five mills. These are located at Bracebridge, Guelph, London and Dundas in Ontario and at Dorchester, N.B. But a rumor persists that Great Britain is likely to place an embargo on the export of linen thread from Ireland, in order to hold the linen business for itself. In such a case it would lend countenance to the possibility of big undertakings in Ontario in the matter of linen mills. A two-million dollar concern they say, is under way, for the manufacture of our flax into linen. Two prominent railway men are reported to be behind the movement. Such an industry in the province would have a supply of flax fibre near at hand and would add considerably to the wealth of the country. With the aid of modern machinery, much of the slavery of manlabor would be removed. Cheap labor has long been one of the stock arguments for flax growing. With that overcome and the persistence of the new manufactory idea, the future of Ontario linens is assured.

One young flax man has contracted for some 100 acres of flax near Pickering. He required the farmer to prepare the land for the crop and to haul the flax to his warehouse. All the remaining labor as well as the seed is supplied by this company, and the farmer is guaranteed $16 per ton for the straw. As an acre will yield about 2 tons, the farmer stands to get about $30 per acre for his ground.

The location of a permanent industry here would be more desirable to the farmer. Most of the present fibre will have to be shipped out of the country. In fact Irish capitalists have been operating in Western Ontario for some time and several local firms have been doing exceedingly well in producing the fibre for export.

It is not practicable to grow flax for producing both fibre and seed from the same crop, for the reason that flax for fibre-making must be pulled so as to get the roots, otherwise too much of the stalk is lost; and besides the sap runs out and makes the quality of that fibre inferior says one writer. Also, flax raised for seed is threshed, and the straw so tangled that it is impossible to get the long unbroken fibres so desirable in making fine linens. And flax grown for fibre is sowed very thick so as to make the stalks grow without much branching, in order to get long fibres; this, of course, is not productive of enough seed for the seedsman.

Furthermore, flax for fibre making must be harvested before the seeds are fully ripe, hence it is not possible to combine seed and good fibre raising in the same crop.

Belgium Fibre Best

The Belgians have been the most expert growers and harvesters of flax for fine linen making. All along the river Lys in that unhappy Courtrai district which has been war ravaged for four years, flax growing and preparation of the straw for spinning has been a main industry of the industrious Belgian farmers for generations.

Threshing flax on the Ontario Government fields at Willowdale last year. The sheaves are switched in between the wheels, which remove the seed and the straw is baled and shipped for final treatment.

The Vessat flax puller pulling 6 acres a day. The machine is fairly successful.

When the crop is ready to harvest it is pulled up by the roots and laid in bunches, where it is left to dry. It may be dried in kilns, but the results are not so good. After it is dry, it is "rippled," which means combing out the leaves and seeds with coarse combs. When the stalks are clean, they are tied in bundles, ready for the next process, called "retting."

Retting is accomplished by soaking the straw in water until fermentation takes place, which separates the fibres from the bark and core.

This is done in four ways, but two give the best results. The most satisfactory way for obtaining a fine grade of fibre is retting in cold running soft water. The river Lys in Belgium is especially well adapted to this method, and it produces a fibre remarkable for its creamy white color, its strength and fineness.

Retting done in stagnant pools, as in Ireland, is next best, but neither the color nor the character of the fibre are so good as by the running water process.

Retting may also be done by chemicals, or by letting the bundles get wet with dew and leaving a long time, but neither gives a very good grade of fibre.

The Lys river method of retting consists of standing the bundles on end and packed tightly together in crates lined with burlap to keep dirt from getting in; then these crates are weighted down about six inches under water for about two weeks. When the retting fermentation is complete, it is indicated by gas bubbles rising in the water, and the rising of the crate above the surface of the water.

After the retting, the flax is spread out to dry and bleach; then it is taken to the breaking mills for separating the fibre from the woody pith and the bark. Breaking is done either by hand or by machine.

After breaking, the flax is taken to the scutchers to be beaten until the fibre begins to show itself more distinctly. At this stage it looks some like gray hair filled with straw.

When the scutching has thoroughly cleaned the fibre, the long fibres are tied together in bundles, which are pressed into 200-lb. or 224-lb. bales, ready to be shipped to the spinning mills. The fibres as thus baled are called "line."

At the spinning mills the fibres are combed through coarse combs to remove broken pieces and dirt. The short broken pieces of fibre thus removed make "tow." This combing process is called hackling or roughing, and is done either by hand or by machine.

Combed Before Spinning

After the hackling, the fibres are sent through a machine which combs them into continuous threads or slivers, which are afterwards doubled as many times as are needed to gain the required strength. Spinning consists of twisting these slivers into a stout thread.

"Tow" is treated differently from line fibre; it has to be beaten, carded and doubled and then spun something like cotton; it is used for the coarser threads and rougher linen cloths.

Because linen is woven of 10 to 30-inch long fibres, rather than of short ones, like cotton, it wears better; that is, the best quality of linens do.

However, there is so much linen made to-day of short and combed-out fibres that much linen does not wear better than good cotton. The old-fashioned long-fibred linens of our grandmothers are many of them in existence to-day after years of hard wear by one or two families.

Signs of Good Linen

Good linen is soft and pliable and has a certain amount of elasticity. The weight of the linen is a guide to good quality. The minimum of weight of good linen is about 4½ ounces per square yard.

Colored linens do not usually wear as well as uncolored because the dyes weaken the fibres to a certain extent. Unbleached linens wear much better than white bleached. The gray or natural color fabrics, of course, wear best of all.

And because linen does not take stains or dyes readily it is easier to take stains and dirt discoloration out of linen fabrics. For this reason we prefer linen for collars and cuffs.

If linens are kept starched and folded, the fibres tend to break on the folds after a time. For this reason, if you wish to make your fine tablecloths last longer, better not starch them much, and also better not press in the folds too sharply.

Scutching the flax. A scene from Europe. The process is explained in the article.

FARMERS ARE READERS

"No other man," declares A. A. Wright of Renfrew, "will be so well educated in the future as the farmer, no woman so well educated as the farmer's wife. There may be men more learned, but not so well educated. The women have time after the children go to bed to read and they do read."

The ROMANCE *of* GIRL GUIDING

By GENEVIEVE

AT a girls' summer vacation camp along the wooded shore of a lake, the girls, dressed in the most appropriate kind of out-door clothes were trying to gather from the sun and the air and the water the reserve force necessary for the next year's work. Some of them were swimming in the lake, some were playing folk games on the sand, others were carrying driftwood for the camp fire, when three outsiders stopped to look at them. One was an artist, one was a journalist, one was a physician.

"What a picture they'd make!" exclaimed the artist.

"What a story they'd make!" said the journalist.

The doctor was pretty sober. He said: "I'm not thinking what a picture they'd make, or what a story they'd make, but, my, what mothers they'd make!"

This expresses something of the attitude of the women who are working to promote the Girl Guide movement—at least they are looking ahead to the girl's womanhood in every single detail of the Guide programme. In an address during her present tour of Canada Lady Baden-Powell, Chief Guide, said:

"We are just beginning to realize the force of a girl's influence. Even the little girl has an influence on her own family; when she becomes a flapper she influences for good or evil the young men who come across her path, and later in her own home and through her children, if she has any, she exerts perhaps a greater influence than any other person, on the social and national life of the country. If the girl has a fine mind and body the woman will have likewise in the days to come, and she will, in her turn, see that the next generation after her will be the fine type of citizen that the country needs.

"We are beginning to realize too that the girl of today must have some right outlet for her energies—some wholesome channel for self-expression. It is not in keeping with the spirit of the times that girls when they are out of school are always at home helping their mothers to cook and wash and sew. The girls of today are restless;—they must not be allowed to drift into habits of idleness and wastefulness or other wrong paths. Any effort to prevent this is worth while, because any social evil is preventable; it may not be curable, but it is preventable if it is taken in time.

The Girl Guide movement has been planned with these things in view. We don't set out to 'do the girl good.' We want her to do herself good. The organization is non-political, broad enough to take in every country—there are Guides in practically every country from Great Britain and the United States and Canada to Japan and India; the last request for organization came from Gowganda. We must have certain rules but we are not bound up with red tape, only tied with a little elastic. And we are not out for numbers on paper; it is quality we want."

Notwithstanding the last condition, the Girl Guide movement was started in Canada only seven years ago, and the membership is now fourteen thousand.

WHEN a girl becomes a Guide, she promises three things: *To honor God and the King; to obey the Guide law, and to do at least one good turn to someone every day.* She is reminded of those three promises every time she makes the Guide salute, with three fingers upright, the thumb and little finger bent and touching. "And," says Lady Baden-Powell, "that all-important little Self then becomes the second consideration and the well-being of others is of primary importance. It is when girls and boys have the desire for the welfare of the State deeply ingrained in their minds, to the extinction of purely personal wishes, that we may look for a new world and a happier national life."

Tent "Dippy-go-easy," Girl Guides' Camp, Collingwood.

The Guide law is an ideal chart and compass for the girl in her teens. It consists of ten definite rules: First, *a Guide's honor is to be trusted.* There was a time when honesty was not considered essentially a woman's virtue, but the poet who wrote "cunning, coy and hard to please," didn't describe the type of woman desirable as a friend or wife or mother or citizen to-day. The world needs women who can be good comrades, dependable friends and safe counsellors, and the training must begin with the girls. The second law is like unto the first: *A Guide is loyal to the King, her country, her employers.* Third: *It is a Guide's duty to do at least one kind action every day.* This might be almost anything, from washing the dishes by the Brownies or the little juniors of the Guides to the splendid war work done by the senior Guides. It is the particular feature of Guide work that, Lady Baden-Powell says, "makes the all-important little Self become a second consideration. It is this law of helpfulness too, perhaps more than the badges they earn, which encourages the girl to train in useful accomplishments. The fourth law is the law of friendliness: *A Guide is a friend to all, no matter to what social class they belong.* We know that legislation is not nearly so powerful a force as neighborliness—especially in a nation like Canada, where one-third of the people speak languages other than English, and where the personal touch is so much needed to create a spirit of unity. The fifth law is: *A Guide is courteous.* It is amazing how little common politeness there is among us. Next, *a Guide is a friend to animals.* We don't expect to find unkindness to animals among girls, but the object of the Guide law goes beyond that. The idea is that the girls should go out into the fields and woods and learn the ways and wonders of the wild life—and through this to have a greater reverence for the laws of Nature and their Creator. *A Guide obeys orders.* This is not only to teach obedience to her superiors; rather to lead the girl to obey quickly and cheerfully the dictates of her own conscience. The eighth law is the law of cheerfulness: *A Guide smiles under all circumstances.* This isn't always possible of course but there is nothing equal to *trying* to smile under difficulties to develop self-control, and almost every regrettable trait in men and women can be put down to lack of self-control. The ninth is the law of thrift: *A Guide is thrifty* in the use of money, clothes, food, everything—a very important consideration in these times of high prices and rather extravagant habits of living. Last, and perhaps most important: *A Guide is pure in thought, word and deed.*

Out door cooking at a Guides' Camp, Vancouver.

Girl Guides in an out-door pageant.

THE idea of earning badges appeals strongly to the girl in her teens. Incidentally it sets her learning arts and handicrafts which are going to make her not only more useful, but which will indirectly work miracles in her whole personality and character. Lady Baden-Powell quotes an unvarnished criticism of the growing tendency to artificiality in the conduct of the girls of Great Britain which might well be considered in our own country:

"The student of manners may well wonder how much farther the reaction against the Victorian codes of womanly good form is likely to go on the part of the younger girls. The flapper, while she consumed quantities of sweets, and tied her hair with astonishing bows, was amusing enough. But in her newer manifestations, as she expands towards the costliest of silk stockings, smokes numberless cigarettes, and makes up with paint and powder as if to go on the stage in a revue chorus, she stands for tendencies that the more experienced man or woman of the world knows to be undesirable from every point of view. Not until the next generation is born shall we know the full extent of the mischief that these restless young girls, craving to draw attention to themselves, are doing to the race."

And the Chief Guide herself, adds: "That is one of the main troubles. The restlessness of the girls whose energies must run somewhere is what it is our business to cope with now while there is yet time. In the Girl Guides, we can supply the right channel for these energies. Let them bedeck themselves with simple uniform—attractive, yet serviceable and without frills. Let them bedeck themselves with badges on their arms—after they have earned them through solid work."

The accomplishments which win badges are varied and practical. The war had a tendency to give every girl a new interest in "First Aid" work. The ambulance badge, a button with a red cross, is awarded to the girl when she passes an examination in simple first aid. A badge bearing the sign of an artist's palette is given for achievement in some branch of art work. For studying something of astronomy, the girl receives the astronomer's badge, a button bearing seven stars;

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The Girl Guide movement is a movement for girls in the country as well as in cities and towns, but whether or not the girls of a community actually become Guides, they will find the Guide aims and rules pretty nearly ideal for any Girls' Club, Girls' Institute or other girls' organization. Members of Women's Institutes who are planning special work to interest the girls may find some suggestions in the Guide programme.

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Canada's National Farm Magazine

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Address—FARMERS' MAGAZINE,
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GENERAL ELECTIONS NOT WANTED

WE do not believe that the farmers of Canada at the present time are anxious for a general election. The work of demobilization has not yet been completed and with the soldiers returning to civil life, and the readjustment of our own industrial population to the new order of things, the situation is such that it would be manifestly unfair to throw the country at the present time into the fever of a party election campaign. Most men will favor waiting for another year at least before Parliament is dissolved.

Doubtless there is a great deal of opposition throughout the country to Union Government. They have perhaps more enemies than any other Government that has been in the country since Confederation. And if a general election should be called at the present time the first feelings would be that this Government would receive but scant support. However, people generally do not know just where they are. The old Conservative party is trying to get into harness. The Liberal party also are holding conventions and arranging for getting into the fight. Along with this we have the action of the farmers throughout Canada. The Western farmers are united in a greater measure than are the farmers of the other parts of the Dominion and they seem determined to keep out of the old party lines and to form a farmers' party. In Ontario and other parts of the East the farmers are going about political matters in a slow but sure way and it is reported that the movement in Ontario politics is going to be a strong one at the next provincial contest. Much talk is going around among the farmers as to the possibility of controlling the Legislature at the next election.

All these matters complicate affairs in Dominion politics. The ordinary voter hardly knows where he is at. Until some definite policy grows out of the present confusion it is hard to say just what turn federal politics will take. The resignation of the Hon. T. A. Crerar from the office of Minister of Agriculture at Ottawa cannot be looked upon as a real desire for a new election this year. He has taken the only correct course that he could have taken under the circumstances. His friends throughout the country have been looking upon him for some time to do something to represent their wishes. They all agree that Mr. Crerar has done good work in the House and in the Government. But he will do further good work and be in a better position to serve the people on the cross benches. As a leader in the Grain Growers' movements of Western Canada Mr. Crerar has been an outstanding figure, and during his short tenure of office has developed well. It is true that he has not developed the art of playing politics like some other men in Parliament or even like some of the Western representatives, but he is closer to the hearts of his countrymen than are these politicians. We look for a very distinguished part in our country's affairs to be taken by the member from Marquette.

WILL SHORTER HOURS PAY?

DURING the past we have been taught that work is a blessing. The old adage runs that the devil always finds work for idle hands to do. But the modern tendency seems to be that we should only work eight hours a day or even less, and have the balance of our time for recreation or for personal development. Either humanity has changed considerably of recent years, or the majority of people are better able to direct their own amusement and their own time than they were in the past.

We cannot help but feel that the present agitation for short hours is but an outcome of the present industrial system that is becoming top heavy. Our most successful men in this country have been our busiest men. Work, it seems to us, will not develop as many evils in the community as will play. Few persons indeed are so well balanced that they do not run into mischief when they have extra time on their hands. Certainly farmers cannot conform to the new ideas of labor without ruining business and turning this old world into turmoil.

THE HIGH COST OF LIVING

IT was rather a startling announcement made by Mr. W. C. Good, a prosperous farmer near Brantford, Ont., before the "Cost of Living Committee" at Ottawa this past week. In his reference to farm labor he said that he was giving his hired man two-thirds of the profit and taking one-third for himself. It will be agreed by a great many farmers that Mr. Good was not over-drawing the case. Many a farmer throughout the country finds that he cannot afford to hire a man to help him with his crops on his hundred acres and so is doing as much as he can with the aid of big implements. This inevitably means a lessening of production, and the only cure will be for prices of foodstuffs to become so high that it will send more people to the land.

GOOD ROADS AND FARMING

IN several parts of the United States the farmers are interested in the establishment of motor truck routes. These are established for the carrying of the farm products to market, running regular service. It certainly would not have been possible to have brought about an organization of this kind, had it not been for the good roads. These companies are claiming that they can carry freight cheaper than the railways can and it is quite evident that this motor truck idea will be established through different sections of the country. And while it may not be possible to compete successfully with the railways in this matter or to do away with the railways, the bringing about of good roads to the country will do much towards helping farmers to market their goods at a reasonable rate and towards supplying the city people with produce a little more quickly.

The railways of Canada have been passing through a strenuous period owing to the demands of the war; also since the war they have been finding it difficult to render a first-class service. Canada has a difficult position as she has greater natural difficulties to overcome than the United States. Steam roads, hydro-electric roads and automobile roads will be all developed here, and each of them be needed. But good roads we must have, for good roads mean so much to successful farming in this country as well as to the support of the industrial population. There has been considerable objection made to the good roads movement on the part of some farmers but we have yet to hear of the farmers along a good road seriously objecting to paying for it.

THE DOMINION DAY ISSUE

FARMERS' MAGAZINE on July first, will carry the second article by Seagar Wheeler, the wheat Wizard of Saskatchewan. This article tells a wonderful story of how he developed the strains of Marquis and Kitchener wheats. He gives all credit to the originators of the wheat at Ottawa, but shows how he developed the dominant character in the wheat, and got, at one time, a yield of over eighty bushels per acre.

Genevieve gives a timely article on Nellie McClung's ideas of the Women and Reconstruction question. Another article that will be of intense interest to every farmer in Canada is entitled "The Wealth of Our Foreign Farmers in Western Canada." A new serial story begins in this issue. "The Idyl of Twin Fires," by Walter Pritchard Eaton, is one of the most delightful stories of country life ever written, carrying the author's characteristic humor, appreciation of outdoor things and a charming love story.

EDITORIAL NOTES

PLANT a maple yet?

WHITE didn't Budget much!

THE war profits are still untouched.

TWO cent postage gets more than a three cent tax.

CANADA is again blessed with a fine crop outlook.

WE sometimes gain revenue by giving some away.

IT looks like a farmers' Legislature in Ontario next time.

THE fellow with a $2,500 salary gets a double dose of taxes.

T. A. CRERAR was perhaps the biggest man in Union Government.

FRUITGROWERS' Association should be on the job now after markets.

FRUITMEN should spray well this year. Bugs and fungi are numerous.

GIVE farmers a ten per cent. profit on foodstuffs and they will be satisfied.

BEEF feeders are beginning to wonder which way the cat is going to jump.

THE United Farmers are moving slowly, but they have their eyes on a goal.

$33,100 for Hanmer's cow and calf is good encouragement to livestock men.

DRURY and Good were summonsed to Ottawa on the High Cost of Living inquiry.

THE country may not have as many people as formerly, but it does not need so many.

THE farmer who gives $5 to his church and drives a car has a poor sense of relative values.

FARMERS do want the daily paper, but they were never so critical of it as they are to-day.

ALBERTA is offering farm help $75 a month, and can't get them. Soon someone will starve.

A COMPARISON of manufacturers' and of farmers' annual meetings lends dignity to the rural men.

THE Prince of Wales is developing some personality. His association in France with Canadians has helped much.

CRERAR has convictions and is honest about them and apparently wants no office. We need more of his ilk.

DON'T give your Victory bonds away. Too many schemers are after them. They are a good investment.

JAMES E. POOLE in FARMERS' MAGAZINE foretold months ago how our cattle market would go. Read FARMERS' and be posted.

LIVESTOCK men are keeping their eyes open for new revenues of sales. Will Dryden is off to England for more pure-breds.

WRIGHT of Renfrew was quite right when he said that no other man will be quite so well educated as the farmer. Farmers read.

THE Whitby *Chronicle* recalls its issue of 1880, when farmers got 14 cents a lb. for butter, 19 cents for eggs and $6 per ton for hay.

EVERY precaution should be taken to ensure good curing of hay before it is put in tight barns. Salt should be used in the mow.

SOME farmers say that the silage last winter was not relished by the stock like other years. Was the southern grown seed to blame?

THE Lord's Day Alliance has been one of the farmers' best friends and every support should be given the men who are handling its policy.

THE soldier boy who is anxious to go farming will do well to make haste slowly and grow up with it. There is a fine future for the good farmer.

ONION seed has been so dear this year that many a farmer has been tempted to lessen his acreage. Ten dollars a pound looks like sowing money.

THE churches are all entering on aggressive forward moves. There is no better safeguard to our national progress than a vigorous spiritual life in our people.

WHAT *is the* IDEAL TRACTOR

By Prof. L. J. SMITH
Manitoba Agricultural College.

IN the preceding articles we considered the good points in tractors up to the motor and its accessories. Now we come to that most important part of the machine, the great throbbing heart of this most recent and increasingly useful of servants on the farm, the great Iron Horse.

We should sometimes pause, in the rush of this busy life, and review the march of events, which, even though we would, cannot be turned back. A generation ago very few looked forward to the time when the farmer would travel the country road at thirty miles an hour with the case and comfort of a railway train, or move over the fields turning over three furrows or doing other operations equal to the work of eight or ten horses, all under the control of one man.

Many may disapprove of these so-called innovations in farm life, as did others when other great labor and time-saving devices first came into use; but nothing can stand in the path of progress. The wise thing to do is to catch step with the times, and not get left behind. The farmer is fast approaching the point where he will rank as among the foremost users of power machinery. He will soon rank high as an experienced engineer and mechanic. Do not miss the handwriting on the wall. Send the farm boy, who is always eager to handle the car or the tractor, to some school where he can get a good mechanical training. Get him off with a fair start in these new conditions of farming where machinery counts for so much.

The highest mechanical skill and ingenuity of this generation has been focused on the development of the modern gas engine. Wonderful progress has been made. The gas engine has been the greatest factor in the recent great struggle, the submarine, the aeroplane, the motor truck, the tank—what a tremendous part the gas engine played in the great war! *Of all the kinds of training offered the returned soldier as he pauses on the threshold of civil life the most popular is that along the various gas engine lines.*

We cannot expect much improvement in the motor of the tractor either in better design or in much greater fuel economy, nor is there any immediate prospect that any one type of motor will be adopted as the ideal standard motor. There is no necessity for building the motors any lighter, for we must have sufficient weight in order that the tractor may pull its full load without slipping, and tractors already compare favorably with horses as to weight per amount of possible draft.

HIGH VERSUS LOW SPEED MOTORS

The heavy type horizontal motor, without doubt, will stand heavy and rough usage and overloads better than the four-cylinder type and should have a little the advantage on fuel economy, but the vertical four-cylinder motor causes less vibration. Some think that the four-cylinder motor will be the ultimate motor for the tractor. Certainly a great many tractors use the high speed motor. In this matter, however, we should compare rather the number of low-speed motor tractors sold with the total sales of the high-speed tractor. In the North-West there are more high-speed motor tractor firms in the market than those of the low-speed type, yet the fewer firms handling the low-speed type tractor have sold more than half of the tractors. During the past few years, the demand for tractors has been so great that any type has found a ready market. We are soon coming to the time when the competition will be keener, and then, as in the breakfast food business, the tractor business will fall into the hands of a number of large firms with a great output of tractors, built on the same economical production basis as the Ford car.

The time may come when the one-cylinder tractor may entirely disappear, but the two-cylinder horizontal tractor is too efficient and durable a machine to be shoved off the boards.

Of course, the ideal tractor motor will burn kerosene. Gasoline will have to be given over to the automobile; and, even then, at least in the automobile truck, we may reasonably expect to have kerosene burning motors. Thus far, the horizontal motor has been able to burn kerosene better than the motor of the vertical type. The great difficulty is in keeping the kerosene in a vapor form after it passes through the carburetor into the cylinder. Once there, it comes in contact with the cylinder walls and condenses; and in the case of the vertical motor, some of the kerosene works down by gravity past the piston rings and into the crank case, diluting the lubricating oil and causing frequent renewals of the same. In the case of the horizontal type engine, this does not occur to any noticeable extent unless the cylinder is badly worn or the rings have lost their spring, and need replacing.

Since kerosene has been found so economical and has come into such general tractor use, the two-cylinder motor design has changed from the formerly popular "opposed type," with one cylinder on each side of the crank shaft, to the "twin type" where the cylinders are side by side and where the cylinder head is a one-piece casting with the valves in the head. With the twin cylinders, the one carburetor serves both cylinders, whereas it is very difficult to burn kerosene evenly in both cylinders of the "opposed type" motor.

FUEL ECONOMY

While on the subject of fuels, it may as well be said that, for stationary engines of all except the smaller sizes, the kerosene engine is the ideal engine if fuel economy is of any importance. If, however, the engine is to be run for short periods of time, and for varying loads, then by all means buy the gasoline engine. Even with tractors the burning of kerosene is often a difficult matter with light or varying loads, and especially in cold weather. The successful kerosene tractor operator gives his carburetor or mixer very close attention.

The ideal tractor motor must have a good governor. A number of tractors are on the market without this most important price of mechanism. Even though it be chiefly a plowing tractor (and no one would think of running a separator, or ensilage cutter, or buzz saw without a governor on the motor) without the governor the engine races when the plows come out of the ground, and dies down when they go in again. It is impossible for the operator to control the motor speed by hand as smoothly and as accurately as can a good governor.

REMOVABLE CYLINDER SLEEVES

The ideal tractor will have removable sleeves in the cylinder, instead of the cylinders cast solid. By this arrangement, the cylinder walls can be made of a more uniform thickness, and the expansion will be more uniform. Then, too, as the cylinder bore wears out of round, the whole cylinder block is not thrown into the scrap, but new sleeves may be put in. The modern practice is to cast at least two cylinders together. Suppose the oil feed goes wrong on one; if the cylinder wall is badly scored, the two or four cylinder block must be discarded. If, however, the cylinders had removable sleeves, only the one sleeve would have to be replaced. One does not have to be an experienced mechanic to see that this would mean a tremendous saving in repair bills. Without doubt, the removable cylinder sleeve is a decided step toward the ideal tractor motor. Several tractor builders are already using the sleeve, and without doubt others will soon fall in line.

Another recent improvement will greatly lengthen the life of the cylinder, and also that of the piston and rings. I refer to the straining of the air as it enters the carburetor. The amount of air sucked into the cylinders of a tractor per season in order to furnish oxygen for the explosion of the gasoline is something tremendous. This air is often (especially in states and provinces where the rainfall is low) filled with

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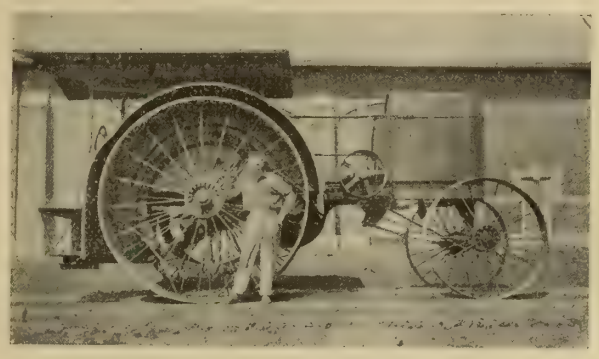

Not every tractor can pull two plows in our Ontario clay soils.

What About Guelph?

THERE is no feature of our farm work that has changed more during the past five years than that of mechanical work on the farm. Horses as power suppliers are being discarded on every side by farmers and others doing draught work. The war accentuated the demand for greater power engines in the carrying trade as well as in agriculture. The result was that the internal combustion engine has been forced into action as never before and the electrical dynamo has been brought more and more to the attention of the practising farmer. On account of the shortage of help the farmer has been forced into the employment of machines to get his production. The high prices that have been prevailing have tempted him to produce more and in order to do so he has had to spend much money in acquiring engines and machines for this production. This forced march has necessitated a rapid learning of new terms and a rapid acquiring of new knowledge in operation of them. In this learning of mechanical work the automobile has played no small part. Most farmers have learned to drive a car and in doing so they had to become acquainted with gasoline engines with electrical equipment and with special building devices. This has meant that the farmer has had to learn mechanical farming to become a skilled man in handling engines and in fact to further extend his field of usefulness in this regard.

The engine companies, the tractor companies and the automobile companies, have been endeavoring in a more or less haphazard fashion to interest the farmers and the young men of the country in the methods of mechanical farming. In this they have done a very useful work. Western Canada has been instrumental in pushing ahead the idea of mechanical instruction through its agricultural colleges perhaps to a greater degree than in other parts of Canada.

One naturally looks, therefore, to Guelph, the Agricultural University of Ontario, to find a fully equipped laboratory, machine shop and operating yard for the instruction of the farmers of Ontario in this line. But a great many people are disappointed in the way Guelph has not gone ahead in meeting with the increased demand for mechanical knowledge. The O.A.C. is doing wonderful work in a great many lines, in fact it is a university that the most farmers of America are proud of; in its live stock work it is going ahead at present at a rapid rate. In many of its other lines it is doing exceptionally good work and in research work it is very little behind, if it is behind, any other institution in America. But in the matter of mechanical instruction the College at Guelph and the Ontario Government is open to much criticism.

On big farms the tractor, the hayloader and the hay fork get quick results. This tractor is quite common here.

When War-Times' Election Act Dies—?

Working Out a Way for Women Voters

By T. M. FRASER

Our Ottawa Representative.

AN interesting matter for speculation in political circles at present is as to whether we are to have a new Franchise Act passed this session. It was announced in the speech from the Throne; and Parliament has been putting it down all along as one of the pieces of legislation which would have to be brought down before the close of this session. But the session is getting on; we are into June; and the budget has to be fought out as well as certain matters of legislation connected with demobilization and repatriation which can hardly be postponed. It is now intimated pretty authoritatively that there will be a Fall session. If this is the case, it may be that the Franchise Act will go over.

It is known, however, that the act has been drafted for some time; the Hon. Mr. Rowell stated in the House that the act had been written, and announced the name of the draftsman—W. F. O'Connor. Ministers generally profess unfamiliarity with its contents; some say it has not come before the Cabinet at all. However, sufficient people have seen it, and there have been enough winks and nods here and there to enable one to give a fairly accurate forecast of its salient provisions. The contentious sections would be few; and, on the whole, the act would likely follow previous acts in the main.

The present extraordinary jumble of franchises and lists in the different provinces would make it practically impossible to hold an election before the new act is passed. The War Time Elections Act expires on demobilization, which is expected to be complete in July.

Provincial Franchises

The following is a brief summary of the franchise conditions in the different provinces: Prince Edward Island has no lists, and no female franchise. Nova Scotia has a different female franchise from the Dominion; the wife votes on her husband's qualification, or, in case of a spinster, on her own. A daughter would vote on the same qualification as her brother would vote as the son of his father. In New Brunswick they have introduced a bill for free franchise; so there would not be much trouble there. Quebec has no female franchise; Ontario has. Manitoba, Saskatchewan, Alberta, and British Columbia have full female franchise. The Yukon would come in under the Dominion female franchise.

Thus, they all differ, more or less; and it is the desire of the Dominion to make female franchise uniform to give them a real franchise; and this can be done only by giving them a purely womanhood franchise. The Act of 1918 does not do this. It applies the Provincial female franchise, providing also that where there is a property qualification the woman may qualify on her husband's or father's qualification, or by income.

The greatest trouble will come with the lists. Prince Edward Island, having no female franchise, can have no list of women voters. Nova Scotia will have lists of male voters, but its lists of women will not fully comply with the womanhood vote required by the Dominion. The law of New Brunswick would not conflict with the Dominion law; so any lists of women prepared by New Brunswick would supply the requirements of the present Dominion Elections Act, so far as lists are concerned. In the present act, Provincial lists are used.

In Ontario, the Dominion and Provincial requirements agree, so far as the franchise goes; but in the matter of lists, only property lists are made up annually. The bulk of the list of manhood and womanhood franchise is made by order-in-council after the province has itself decided to hold an election; and is made up every four or five years for Ontario purposes. Those lists, therefore, would not be available at all times. This is the result of an act passed in Ontario years ago, changing its list-making system. In that province, it is always necessary for the Dominion to make special lists for unorganized districts, such as the far north, where they are not municipally organized.

Quebec does not make any lists of women; but, even if it did, the bounds of Quebec constituencies for Provincial and Dominion purposes are different; and lists would have to be gone over and voters segregated in the proper Dominion electoral districts.

In Manitoba, the lists of men and women would both suit, as far as usable, only that the boundaries of the electoral district for Dominion and Provincial purposes differ here also; and it is necessary, as it always has been, to make special Dominion lists for unorganized districts, as in Ontario.

In Saskatchewan and Alberta the Dominion has never used the Provincial lists, but prepares them, as was done in the War Time Elections Act, immediately before the election. Both provinces have female franchise, and it would be possible to use Provincial lists; but here, also, the bounds of the Dominion and Provincial electoral districts do not jibe, and subsequent segregation by the Dominion of the votes of particular Dominion electors would have to be made.

British Columbia changed the method of its Provincial list making three or four years ago. It now makes lists alphabetically by electoral districts; and some of the lists have three or four thousand names in alphabetical order of voters in a particular Provincial electoral district, the bounds of which district do not coincide with those of the Dominion districts. So that all that would be available from Provincial list for Dominion purposes would be an alphabetical list of names of people who live within a particular geographical area. For Dominion purposes it would be as much trouble to segregate those names as to make an entirely new Dominion list. In the Yukon, the Dominion lists have always to be made up by the enumerator system.

As soon as the War Time Election Act goes out of force—as it will do automatically and without action by Parliament on the completion of demobilization—the Dominion Elections Act of 1898, which the War Time Elections Act merely supersedes, will revive. If an election were to come on, therefore, the only machinery available would be the Provincial lists; and, as shown, by reason of changed conditions since the war began, that act will apply only in places.

It would seem, therefore, that in troublous times like these, when there should be the means for the people to express their feelings at the polls, it would be risky to adjourn without an election act; to do so would leave us with no machinery to conduct an election.

As to what is proposed in the new Franchise Act, which will come before the Cabinet for consideration shortly, whether it is brought down in the House or not, the summary given herewith is fairly accurate in regard to its main provisions:

Some of the provisions of the War Time Elections Act will be continued. The bulk of the Government's support is Conservative; and it is well known that it holds strong views on the question of disfranchisement of alien enemies. The Great War Veterans' Association has expressed itself as strongly in favor of the continuance of the principle; and the feeling in the West generally would seem to be in favor of this. So far as the Liberal Unionists from the West go, although they expressed strong views on the matter in 1917, it is probable that recent developments out there have led to some modifications of the same. Provincial Governments have taken an unexpectedly strong stand on the language question. English is now the only language of instruction. Only in Quebec and Manitoba is French the official language; and in Manitoba only in certain particulars. From a Provincial standpoint it is not recognized, so that the West has not the same strong reason to cater to the foreign vote as in the past. The Westerners have been having serious troubles with the foreigners in the mines and elsewhere, and the feeling towards them is not good. For this and other reasons, there is not the same feeling there towards the War Time Elections Act as there was; although it is still denounced in the House, by French members of the Opposition particularly, as an iniquitous measure. It is not likely that either in the Government or in the House would the Liberal Unionists as a body, or even in large numbers, oppose an extension of the provisions for a reasonable time respecting the right of naturalized alien enemies to vote.

A Literacy Test Coming

There has been a good deal of agitation with regard to the literacy test for voters. Before female franchise was granted it was used as an argument that educated women were better qualified to vote than illiterate men and there was much truth in it. If the act provides a literacy test, as the Immigration Act does (and as it is almost certain this new act will do), this would count deeply with this foreign vote friendly to the aliens in Canada.

The Franchise Act is likely to be interesting to certain classes of labor. The railwaymen have been given to understand that measures will be enacted enabling railway men, commercial travellers, sailors and others whose callings require their absence from polling places on polling day to vote in advance of that day. It is expected that the Act will contain provisions by which polling places will be established in certain fixed localities and kept open for a few hours for several days before election day. The votes would be counted in the ordinary way, but the poll would not be announced, of course, until the general result was published.

There is a good deal of uncertainty as to whether the enumerator system will be preserved; although the chances are that it will. It was established by the Laurier Government for Saskatchewan, Alberta, and the Yukon. When the War Time Elections Act was passed, the system was adopted for all of Canada. On the whole, it seems to have worked well; but the East is less in favor of it than the West, and it is understood that Hon. Frank Carvell has opposed it pretty strongly.

It has been announced that women will be entitled to sit in the House of Commons. Whether this entitles them to a seat in the Senate or not is not settled, and no pronouncement has been made on it.

Publicity of Campaign Funds

A matter which it is not unlikely will be dealt with is publicity of campaign funds. In the West, particularly, the farmers and others have been agitating for such publicity being required by law; and it is not improbable that the new Act will contain measures dealing with this matter.

There have been frequent speculations with regard to the manner in which the new Act will be operated, but no definite statement. It has been suggested that it should be handed over to an independent officer, with wide powers of administration, who should have some such title as Elections Commis-

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Voting in Bonn, Germany, after the war. Voters waiting in turn. Note the women.

Puzzling Over Calf-rearing Business

By R. Russell Fleming

A Bruce County Jersey Calf.

The writer of this article is already familiar to readers of FARMERS' MAGAZINE in his previous articles on Tractors, in Pickering, and in his stories of Burbank. He is at present on the big Fleming farm of 1,000 acres, where Jerseys are almost idolized, after a trip to New York farms, where he had his eyes opened. What applies to Jersey calves carries its essentials also to the calves of all other breeds.—EDITOR.

SOME time ago while being shown through the famous Hood Farm herd of Jersey cattle, I noticed as we travelled from stall to stall many calves running loose with their mothers. "Tell me," I said to the manager, "the reason for this strange departure from the almost universal practice of separating calves from their dams immediately after birth, if I would not be intruding on a secret." "No," he replied, "the fact of the matter is that we find good calf feeders practically impossible to get. Somehow or other, men either do not know or else will not take the pains, and the result is we lose our calves. The loss of one calf is often more than the wages of two or three men for a year. We realize, however, the disadvantages of leaving calves with their mothers. Udders get out of shape and we lose all the cow's milk, which is generally more than sufficient to raise the calf. But the point is that we can be practically sure of ourselves when we leave nature to herself."

A short time after I was on the train on my way for home. And as I gazed out on the magnificent farms through which we were passing I had the opportunity to do a little silent reflection. "Here," I meditated, "is one of the greatest breeding enterprises on the continent. It is operated by one of the most skilled cattle experts in the States, and yet, after years of experience in the business he is forced in his calf raising to go back to nature herself. If such men cannot get the results they want by artificial methods, what about the average man?" And then I recalled his explanation of the trouble and his comment that his feeders "simply would not take the pains." "He is right," I reflected; "it is all a question of pains—just plain carefulness in the thousand and one petty little details. And the man who defined genius as 'an infinite capacity for taking pains' was not far wrong either."

I have spent more than one anxious day puzzling over this calf raising question. We have had some feeders who were always in trouble. They were always grumbling about the stables or something else. And when an attack of scours visited the calves, they always had some ingenious reason. Yet they never got results, and about all we seemed to be paying for them was to wheel out dead calves. Then, if we were lucky, we would get a careful man in the aforesaid workman's place—just one of those rare men that employers sometimes run across, who are neat and tidy in their work, who have a place for everything in the stable and who upon receipt of a half-washed calf-feeding pail from a careless dairyman, will go in and start a fight. And then our troubles would somehow or other disappear over night.

Our own experience has, of course, been entirely with Jersey cattle, and we have found the milk of the average cow a little too rich for her calf, with the result that, when fed in raw state, digestion troubles followed. A Holstein breeder some time ago brought this to my attention, and suggested that we feed our calves on Holstein milk, or some milk lower in butterfat. Subsquent experiments have proven that he was right. We have not Holstein milk, but achieve the desired result by adding hot water. Most dairymen, I think, finish milking all their cows before they feed the calves. This means that the milk cools considerably, particularly in winter. By using hot water we have a simple method of reducing the butterfat percentage and restoring the milk to its original blood heat.

One of the most successful calf feeders on the continent was good enough to pass on to me a calf schedule which he used with success. And it is only with a feeling of assurance that it will prove of benefit to some dairymen that I take the liberty of reproducing it.

Calf Schedule

Let calf remain with mother not over 24 hours after birth. Feed calf mother's milk for first ten days as follows: 2 lbs. whole milk and ½ lb. skim milk three times a day. Feed milk at a temperature of 98 degrees and weigh the milk or measure it.

After the first ten days, feed the regular herd milk and gradually increase to about 4 lbs. to a feed twice a day, at end of fifteen days mixing as follows: 3½ lbs. whole milk with ½ lb. skim milk. Feed this amount until skim milk is substituted at from four to six weeks old, depending on progress of calf. Change to be made gradually (about one week) during this time. The calf will be able to eat hay and some grain. Do not feed alfalfa or clover hay to young calves—only timothy hay until six months old:

5	lbs.	skim	milk	to a feed	when	8	weeks old.
6		"	"	"		9	"
7		"	"	"		10	"
8		"	"	"		12	"
8		"	"	"		14	"
9		"	"	"		16	"
9		"	"	"		18	"
9		"	"	"		20	"
9		"	"	"		22	"
9		"	"	"		24	"

Feed all of grain that calf will clean up between milk feeding, until six months old. After that feed 2 or 3 lbs. of the following ration per day until eighteen months old:

The following parts by weight: corn meal, 3; ground oats, 3; wheat bran, 1; oil meal, 1.

Pay close attention to details. When calf shows signs of scouring, cut down feed supply, principally the amount of milk, in half. If a sudden attack take all of milk away for feed or two and give castor oil, 1 to 3 oz. in a pint of milk, (according to size of calf). Give calf warm water to drink two or three times per day after third week. Exercise calves every day. Lead bull calves every day. *Pans, mangers and feed boxes to be cleaned and sterilized every day.* Wash calf's navel with iodine a short while after calf is born. Sprinkle a little salt in feed once each day.

A mutual admiration society.

I pass on the above chart with the recommendation that any dairymen who wish to, may hang it up in their barns, in order that it may be referred to whenever desirable. Feeding, however, is an art that must be acquired; and while the figures and methods of procedure given above will prove fairly accurate as a general rule, the experienced feeder will add to it or subtract from it according as his judgmnt dictates. In feeding livestock, every animal presents a special study.

The sage has told us that if you want to train a child, you have to commence with its mother. So it is with calves. Just before the calf is born, it is customary to give the mother a laxative drink of, say, 1 lb. Epsom salts in two lbs. water. This helps to cool the blood and acts as a laxative. After birth the calf should be left with the cow for about 24 hours. The cow should be permitted to lick the calf. This helps to quiet the cow, dries the calf and starts its blood circulating. As a rule the calf will immediately commence to nibble for milk; and at times may have to be aided. It is very important that it get this first milk of the cow as it contains special medical properties for its stomach. After twenty-four hours, the best procedure is to take the calf away from the cow. By so doing it is taught to drink from a pail, and the cow to be milked by hand, from the very start. For it can readily be seen how the calf will be thrown off its feed and the milk flow of the cow decreased, were it to run with the cow for several weeks and then be suddenly taken away. The calf should be fed on its own mother's milk, at any rate, for several weeks. If, as sometimes happens in case of a heifer with her first calf, it is impossible to get the cows to nurse the calf, it will be necessary to feed other milk, in which event be sure to feed 1 or 2 oz. of castor oil, to keep its stomach in proper condition, that is, for the first feeding.

Assuming then that the stockman has commenced from the very first to feed the calf from a pail, his aim will be to imitate nature as closely as possible. That is, he will recognize that the cow's milk, under nature's methods, reaches the calf at blood heat (about 100° Fahr.) and will see to it that under his artificial methods, the heat of the milk is the same. Also he will see that the calf gets the correct quantity and at the correct time, regularity being important. When sucked through the cow's teat, the milk comes slowly; but when fed

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An Ontario Holstein calf herd with farm residence near Norwich, Ont.

A FOOD *That Has* NO SUBSTITUTE

By DR. E. V. McCOLLUM

Two years ago you who are interested in the production of dairy products were selling a food product which had serious competitors. Milk does not furnish protein in so cheap a form as do beans, nor energy in so cheap a form as cottonseed oil. You did not have a convincing answer to the competitor who told the public in your presence that he had something just as good and at a lower price. Today you are in an entirely new and independent position. You can affirm with no fear of contradiction that you are selling the one food for which there is no effective substitute. Modern nutrition investigations have established that the proteins of beans are of very poor quality as compared with those of milk, and that it is not enough that we should grease our bread so that it can be swallowed with ease. There is a very good reason why we should butter it. You all know the story of the researches which have placed in your hands the materials with which to build the greatest industry in the world.

First, let me mention the great need of increasing milk production in certain parts of the large cities. We have in Baltimore a fairly large area, probably containing 100,000 population, where nearly all the children have rickets, a disease characterized by faulty skeletal development. Dr. Hess of New York City has called attention to the existence of similar districts in his city. They exist in nearly every one of the larger cities of the country. In these districts the inhabitants use very little dairy products. In the South there are large areas where the consumption of dairy products is extremely low, and is reflected in the standards of health in the communities where this is true. There is greater need for education in these and other districts regarding the principles of nutrition and their importance in relation to health.

I am conscious that there is often skepticism in the minds of my hearers when they listen to me express my views as to the importance of dairy products in the nutrition of man. I have been forced to accept certain conclusions by such an extensive experience in the observation of animals of several species, restricted to diets of so many different types, and have never seen satisfactory nutrition except when the diet, in the case of animals of the omnivorous type, the capacity of whose digestive tract is limited, and comparable to that of man, is made up on certain lines. It has not been found possible to induce a satisfactory condition of nutrition without one or another of what I have termed the protective foods. This term includes milk and the leafy vegetables and eggs. I have attempted to show that wherever man is not using milk in considerable amount in his diet, he is either attempting to make a liberal consumption of leafy vegetables take its place, or his nutrition is so poor that he is susceptible to disease in a degree that is unknown among the better fed.

F. H. Westney's new home, Ontario county.

Dairy Products and Health

It seems certain that there is a very important relation between the use of dairy products and the health of man in every part of the world. In the large cities it is in those districts where the diet is derived in great measure from degerminated cereal products, tubers and meat, that the health conditions are worst. In parts of the South where the diet does not afford appreciable amounts of dairy products the standards of health are lowest. There is no class of people who are dying of tuberculosis at a more rapid rate than are the non-citizen Indians, yet these people live for a large part of the summer out of doors, do not have to engage in severe labor, and have sufficient funds to keep them supplied with food and clothing. It is, I believe, due to their making a wrong selection of food that their health standards are so low.

During the war the older system of nutrition which deals with the diet as consisting essentially of proteins, carbohydrates, fats and mineral salts, but in actual practice takes into account only the protein and energy supply, has been pretty well tested out and has been found wanting. There are many thousands of children in Europe who have been fed over a period of many months on a diet which was arithmetically satisfactory in that the protein and calories supposed to be necessary were supplied, yet the health of the children has suffered, their growth has been suspended, and tuberculosis has taken a high toll of life, and bids fair to continue for some time to do so. The trouble, so far as I have been able to learn the facts, is in great measure due to the ration being wrongly selected. The cereal grains being the standard agricultural crops, and having the highest keeping qualities, have been relied upon to too great an extent as a source of food. Health cannot be maintained on a diet derived from those food substances which are storage tissues of plants, or, in other words, from seeds, tubers and edible roots. These must be supplemented either by an abundance of leafy vegetables or dairy products in order to make them complete from the dietary standpoint.

Why Children Fail to Grow

There has been in recent years a vigorous movement toward the betterment of the condition of the school children in many of our large cities. Medical observations have shown from fifteen to twenty per cent. of the children in large cities where there are crowded sections to be under-nourished. It

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FIELD CROPS *in this* PECULIAR YEAR

FALL wheat in Ontario and in Alberta is showing up very well. The acreage in Ontario is not quite as large as it was three years ago, but it is in better shape. The acreages of spring wheat and coarse grains will not be as large as expected on account of the character of the spring, but those crops that were put in early are showing up well and will likely be above the average yield. It is a very peculiar year indeed in that we find some of the best crops that the province has seen, alongside some of the most unpromising ones. Late sown grain cannot be expected to produce the yield of the earlier sown grain and while there may be a certain amount reaped from grain sown about the first of June there is always considerable doubt as to the final outcome owing to the likelihood of dry weather in July and in the hastening of the ripening period.

But Ontario never knows what it is to have a total crop failure. If they lose in one crop they make up in another. The mixed farmer of Ontario is therefore always on a sure basis in that he does not have his eggs all in one basket. He has been making considerable money all through the present season from eggs, milk and butter and livestock. These all have been the highest to his knowledge. Hay has been selling at country points as high as $30.00 per ton; eggs have touched 50c; butter 55c and beef 15c on the hoof. Pork also has reached prices never before dreamed of. When the farmer could take a load of hogs to the market and get $23.00 per cwt. for them it seemed almost too good to be true.

Captured German gun just arrived in Toronto.

The livestock farmer though is a little doubtful of his position. While we are well supplied with livestock in Ontario and in fact in the whole of Canada, and while Europe is short of livestock there is the fear that shipping may bring it in from far distant countries to the British Empire and thus reduce the prices that are being paid in Canada. This in itself would not be a bad thing were it not for the fact that a great many cattle have gone on to pastures in Canada at a high cost. Many farmers have put out upon their grass cattle costing 12½c to 14½c per pound. At the least calculation in order to make returns from their pasture they will have to have the same prices when these animals go back into the market. Generally they reckon on getting a cent or two above the cost price. It is almost impossible this year to look for any such returns and the fear is that probably the cattle will have to go on the market at a less cost per pound than the purchase price. This fact will entail a constant watching of the market to take the least loss instead of ordinarily trying to make the most gain. The after-the-war adjustment is bound to come in livestock and that farmer will be well advised who regulates his herds accordingly.

There are other cash crops in Ontario though that are likely to return the farmer some good money this year. It is estimated that there are about 20,000 acres flax sown in Ontario alone for its fibre, which is sown on a guarantee from the flax men of about $16.00 per ton. This will mean an average return of from $25.00 to $32.00 per acre of almost clear money on this 20,000 acres. Again there is a larger sugar beet acreage than usual. During the past few years sugar beets have paid the farmer well on account of the increased price per ton that they have received. Many farmers last year made about $100.00 per acre out of sugar beets. As there is no reason why Ontario cannot produce almost her whole supply of sugar this industry ought to be looked upon favorably by all farmers.

Pea-growing in Ontario has been coming back to its own also. In many parts of the province last year fine crops of peas were grown and as the price ran from $2.00 to $3.00 per bushel, the returns per acre paid almost the purchase price of the land. In Ontario county several big farmers grew crops of peas that made from $500 to $1,000. This was almost found money to them as this was an unexpected addition to their farm finances. Although the price this year is considerably less the crop looks very promising at the present time and if the pea-bug does not intervene, it is likely that some good money will be made again this year.

Clovers have come through the winter fairly well and there are some good acreages of both sweet clover, alfalfa, and red clover in the province. That the price of the seed will be high during the coming year is almost certain.

Anti Air-craft captured gun in Toronto. Captured before it had fired a single shot

Farmers' Advances Ignored by C. M. A.

Reprinted from the Financial Post.

Paris, April 10th, 1919.

My dear Sir:—

I notice in the *Grain Growers' Guide* a quotation from THE FINANCIAL POST, in which severe criticism is made of the present management of the C.M.A. I presume you are the author of this criticism. If so, I wish to commend you very heartily for your courage, and I can only hope that the membership of the C.M.A. will take the matter to heart.

There is no reason why farmers and manufacturers should not be on friendly terms. Both are of prime importance to Canada, and I am satisfied that the rank and file of both classes would do the fair thing; but they don't understand one another, and things are getting worse, instead of better.

This foolish dope now being issued in flaming "ads" by the Reconstruction Association is irritating the farmers very seriously, and, unless some change is made, I am fearful of the consequences. For years I have tried to bring the two classes together in friendly conference, but with little result.

Last fall, I believe through Mr. Parsons, I was invited by the Toronto Branch of the C.M.A. to meet with them and speak to them of the farmers' viewpoint. I consented gladly, and twice a date was fixed, but both times the C.M.A. secretary wrote, postponing the date, and it looks now as if they are deliberately unwilling that the conference should take place.

I am prepared to make some little sacrifice to meet them, but cannot force myself upon them. Class antagonisms have grown more pronounced in Canada during the last few years, and if we are not careful we shall be in for industrial warfare of a most destructive kind before we are aware of it. The so-called "laboring" men are growing restless and embittered, for either real or fancied grievances, and on all hands there is all too little of the spirit of good will.

I don't know what you can do to mend matters, other than to speak out your mind as you have done, but perhaps the opportunity will present itself for a "get together" movement some time.

I was present (on behalf of agriculture) at a very representative banquet in Montreal the other day, in honor of E. W. Beatty and Dr. Taylor, of Queen's University, and made a plea for more friendly and more frequent conferences. I know that the organized farmers are willing and anxious to meet the other parties, and we have taken definite steps to try to maintain closer and more friendly relations with organized labor. If the C.M.A. will come half way to meet us, there is no question but that good will come of it.

I thought I would send you these few lines to let you know my views.

Yours, etc.,
W. C. GOOD.

Col. J. B. Maclean,
c/o Maclean Publishing Co.,
University Avenue,
Toronto.

The above was received nearly two months ago. It was not intended for publication but it is so timely that a few days ago permission was sought and given. Mr. Good is a graduate of Toronto University; a very successful farmer, and one of the leaders in the National and Provincial Farm Movement. THE FINANCIAL POST has repeatedly said that the big farmers were, like the big business men, very fair. That they were not unfriendly to Canadian manufacturing or a protective tariff. That the real trouble was that the C. M. A. affairs were in the hands of a few narrow-minded men who had been mismanaging its affairs and misrepresenting its membership, estranging the farmers, the labor unions, the clergy, the returned solders; and finally, and quite unnecessarily, within the past month the retail merchants who, more than any others, can make or break the Made in Canada movement.

Mr. Good's letter will be read with great satisfaction by many manufacturers who misunderstood the farmers' attitude—an attitude that has been misrepresented in the association. There is now no further excuse for the two most important Canadian interests not getting together, a consummation towards which we have been working for years.

The manufacturers are not the most powerful class in Canada. The farmers are, also they are the most important. But the position the C. M. A. occupies gives it the greatest direct influence.

It is not an organization of individuals but of trustees, who were invited and entrusted by the people of Canada in 1878 to build up our home industries. We have paid millions in taxes to support them and we have entrusted them with more millions of our savings to enable them to carry on. Let the pin-heads get this trustee thought.

The big men who took on the job in 1878 and their successors have done magnificently. They were the chief factor in making Canada what it is to-day. We owe far more to the big men, who then and since have given the best that is in them for Canada, than we can ever repay. There are hundreds of men who have given, and are giving, their lives to the work, who have built up great industries, but who spent relatively more money for personal pleasure when they were employees than at any time since becoming employers. There have been no 48-hour weeks for them. They have made generous profits, but this money has gone back into more buildings, more plants, more wages, higher wages. These are facts that cannot be too often repeated at this time.

As we have time and again pointed out the manufacturers to whose sacrifices we are more indebted than any other are the most abused and mistrusted in all Canada. And the neglects and offences of the group controlling the C. M. A. are responsible. With many of them, association work is a "fad" not a "business." It is not pleasant to write thus of one's friends, but our prosperity, the prosperity of the readers for whom THE FINANCIAL POST speaks, and of all Canada is at stake. Germany is carrying on a tremendous propaganda to weaken Canadian industry. Groups of English manufacturers are doing their best to cripple Canadian competition. We have already given names and incidents. If you can get close enough to Lloyd Harris, who has done such magnificent work for Canada, he can give others and can show the actual documents.

And have you observed that the leaders in the present labor troubles are nearly all Old Countrymen or Germans, masking as Russian or English? In the Toronto Strike Committee of 15 only two are able to set up a claim to Canadian birth.

THE MERCHANTS BANK OF CANADA

Statement of Liabilities and Assets at 30th April, 1919.

LIABILITIES

1. To the Shareholders	1919	1918
Capital Stock paid in	$ 7,000,000.00	$ 7,000,000.00
Reserve Fund	7,000,000.00	7,000,000.00
Dividends declared and unpaid	194,194.00	176,900.00
Balance of Profits as per Profit and Loss Account submitted herewith	574,043.32	437,973.92
	$14,768,237.32	$14,614,873.92
2. To the Public		
Notes of the Bank in Circulation	13,316,033.00	12,327,168.00
Deposits not bearing interest	43,552,214.61	34,886,747.83
Deposits bearing interest (including interest accrued to date of Statement)	91,904,993.37	75,946,985.48
Balances due to other Banks in Canada	2,614,696.64	1,400,941.75
Balances due to Banks and Banking Correspondents in the United Kingdom and foreign countries	105,076.96	1,161,976.79
Bills payable	.....	.....
Acceptances under Letters of Credit	464,153.05	598,851.20
Liabilities not included in the foregoing	.....	.....
	$166,725,404.95	$140,937,544.97

ASSETS

Current Coin	$ 4,946,946.33	$ 4,890,061.36
Deposit in the Central Gold Reserves	7,000,000.00	6,000,000.00
Dominion Notes	8,405,602.50	5,912,092.50
Notes of other Banks	985,044.00	983,076.00
Cheques on other Banks	6,082,616.99	5,311,786.12
Balances due by other Banks in Canada	3,215.80	4,704.37
Balances due by Banks and Banking Correspondents in the United Kingdom	123,496.50	82,580.53
Balances due by Banks and Banking Correspondents elsewhere than in Canada the United Kingdom	1,903,040.10	1,357,843.03
Dominion and Provincial Government Securities, not exceeding market value	6,005,573.65	5,435,464.66
Railway and other Bonds, Debentures and Stocks, not exceeding market value	4,119,705.32	4,060,204.70
Canadian Municipal Securities and British Foreign and Colonial Public Securities other than Canadian	15,238,399.32	14,589,065.54
Call Loans in Canada on Bonds, Debentures and Stocks	5,134,690.71	5,223,953.88
Call Loans elsewhere than in Canada	2,801,857.72	3,906,648.93
	$62,750,188.94	$57,667,481.62
Current Loans and Discounts in Canada (less Rebate of Interest)	95,874,426.04	76,194,016.15
Current Loans and Discounts elsewhere than in Canada (less Rebate of Interest)	332,918.12	339,987.29
Liabilities of Customers under Letters of Credit as per contra	464,153.05	598,851.20
Real Estate other than bank premises	782,326.64	312,928.11
Overdue Debts, estimated loss provided for	386,973.56	272,226.60
Bank premises at not more than cost (less amounts written off)	5,253,269.48	4,886,438.98
Deposit with the Minister for the purposes of the Circulation Fund	366,000.00	355,000.00
Other Assets not included in foregoing	515,149.12	310,615.02
	$166,725,404.95	$140,937,544.97

H. MONTAGU ALLAN, President

D. C. MACAROW, Genaral Manager

Report of the Auditors to the Shareholders of The Merchants Bank of Canada

In accordance with the provisions of sub-sections 19 and 20 of Section 56 of the Bank Act, we report to the shareholders as follows:—

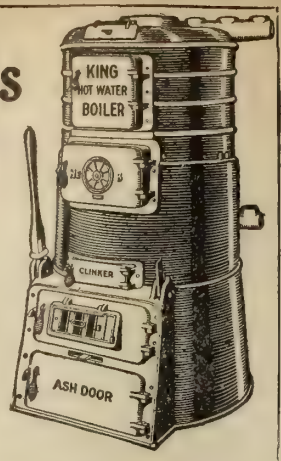
We have examined the above Balance Sheet with the Books and other records at the Chief Office of the Bank and with the signed returns from the Branches and Agencies and have checked the cash and verified the securitiese of the Bank at the Chief Office against the entries in regard thereto in the books of the Bank at 30th April, 1919, and at a different time during the year and found them to agree with such entries. We also attend at some of the Branches during the year and checked the cash and verified the securities held at the dates of our attendances and found them to agree with the entries in regard thereto in the books of the Bank.

We have obtained all the information and explanations we have required. In our opinion, the transactions of the Bank which have come under our notice have been within the powers of the Bank, and the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Bank's affairs, according to the best of our information and the explanations given to us, and as shown by the books of the Bank.

VIVIAN HARCOURT, GORDON TANSLEY, } Auditors.
(Of the firm of Deloitte, Plender, Griffiths & Co.)

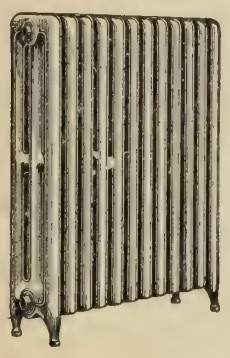
Montreal, 23rd May, 1919.

Your Home Needs Hot Water Heating



Old fashioned heating methods are *expensive, unsanitary,* and *unsatisfaciory.* Stoves and hot air furnaces are being abandoned. Real Estate men find it hard to sell houses that have not hot water heating because people will no longer put up with the inconvenience and inefficiency of old methods. If your house does not have Hot Water Heating, it will pay you in *Health, Comfort* and in *Money* to take out the old and put in the newer and better kind.

KING HOT WATER BOILERS AND IMPERIAL RADIATORS



The most improved ideas in generation and radiation of heat are combined in King Boilers and Imperial Radiators. If you are interested, let us send you our descriptive literature. We will be pleased to supply you with information as to size and cost, without obligation. Write us NOW.

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Builders of King Cars — Artemas Ward, President — Detroit, U.S.A.

Replying to a recent letter addressed to Mr. Artemas Ward making inquiry as to the reputation of the Michigan State Auto School, will say that as far as I know all Detroit Automobile manufacturers endorse the work they are doing.

It is managed very efficiently and they have been turning out some pretty good men for the automobile industry and cannot see any reason why you should hesitate about taking a course with this institution.

Yours very truly,
KING MOTOR CAR COMPANY.

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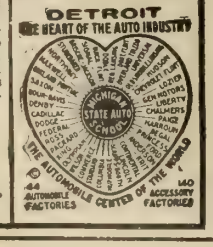

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West Not Pleased With Budget

By T. M. FRASER
Our Ottawa Representative.

OWING to the fact that, in my absence from Ottawa, this correspondence has been omitted from the last two or three issues of FARMERS' MAGAZINE, it might be assumed that a great many matters of vital interest would have to be reviewed; but in looking back over Hansard, and generally reviewing what has taken place in the past month or six weeks, it does not seem to me that your readers have missed much.

Sitting in the gallery late, on hot nights, as has happened very frequently during the past week or ten days, and watching legislation and estimates and things go through the parliamentary mill, I have been constantly reminded of that line, "and wretches hang that jurymen may dine." When the weather was cooler, and the members fresh from their constituencies with the novelty of the work renewed, they were apt to inquire pretty carefully into the items in the estimates as they came before them; but now, as the hour grows on toward midnight, and the heat of the chamber gets oppressive, there is not much sympathy for the member who insists on prying into the particulars of expenditures, and he is apt to be cut off in the middle of his protests with a chorus of "Carried, carried." Economy may go hang in order that legislators may get to bed.

Parliament, taking its tone from the government, which, presumably, takes its tone from the people, is extremely inconsistent. With the exception of some members of the Opposition, who, presumably, feel it is their business to object—and a rare prophet of calamity, like Hon. Frank Carvell, there is not much heard about economy, and still less practised. Almost every member will agree to paring down in every constituency but his own. There have been vast sums of money granted this session in ways that were perfectly legitimate; but for which there was no pressing need. Seeing some of the appropriations which have gone through, it is hard to believe that members of the government are in earnest when they tell us that we shall be one hundred million dollars behind the game this year. The civil service, which is of common knowledge a cess-pool of nepotism, incompetence, and waste, is now being "classified." But the ministry does not hold out any hope that after this classification has taken place, the treasury will be any the better of it. Indeed, one of the results is expected to be a general adjustment of salaries, with an upward tendency, and no reduction in staff.

Perhaps the farmer who reads this will say to himself: **"Hold you on, my boy, until we get some of our farmer candidates into the House. We'll put a crimp in that sort of thing."** Maybe so, but the experience of the farmers now in the House, particularly those western men who were sent here to effect numerous reforms, is that they do not get very far. To get anything, or anywhere, in the House, you must fight for it. The lone fighter is very quickly put down as a crank, or an obstructionist. Few men like this sort of distinction. **It is easier to fall in with the boys and be agreeable.**

Politics a Matter of Compromise

Some politician said the other day that it was a pity there were not some representatives of labor in the House, so that the attitude of that element might be always available for the guidance of parliament. He knew, of course, that the only viewpoint that cuts any figure in parliament is the one that supports the government of the day. Very frequently excellent constructive suggestions emanate from the Opposition; not only in this parliament, but in every parliament. How often are they given any consideration? Governments are not out to have any credit attach to their opponents. They may, it is true, steal the suggestions, change them around in unimportant particulars, and adopt them later on; but then they are put forth as their own.

The moral of all this is that the farmers, or labor, or any other interest not joined to one or other of the old line parties, must be in parliament in sufficient numbers to command respect (and that means to command fear) before they have much attention paid to their suggestions or wishes. All this session we have seen a great deal of attention paid to the western representation in parliament: speculation as to what they would do; would they stick together solidly, or would they "fall in line"; would they go to the cross-benches, or would they cross the floor and join forces with the Opposition; but little or nothing as to the actual merits of their case. Politics **are largely a matter of compromise; but, still more, of expediency.**

When the estimates of the Department of Agriculture were up in the House the other day, several western members made the suggestion that something should be done to encourage Seagar Wheeler, of Rosthern, Saskchewan (a contributor to FARMERS' MAGAZINE), who has probably done more to bring Canadian grain to the notice of the world than any other man. He has beaten all competitors five times at International Farm Congresses in the United States for wheat, and has won innumerable other prizes for other grains. On two occasions he beat all competitors with strains of wheat which he himself developed and named. It was Dean Swift, I think, who said that the man who made two blades of grass grow where only one had grown before, was worth the whole race of politicians put together. It is certain that Seagar Wheeler's work for Canadian agriculture has been of more value to Canada than the efforts of many politicians. For ten years and more he has gone on experimenting without aid and without recognition, except such as he has won in open competition with all the American continent. He is a poor man and likely always will be.

To the suggestion that he be given some aid by the Government, the Minister of Agriculture replied that he knew and acknowledged Mr. Wheeler's good work, but he was afraid to create a precedent, and also thought the recognition should come from the Provincial Government. As the Provincial Government of Saskatchewan has already passed the buck, by stating that

J. B. MUSSELMAN
Sec. Saskatchewan Grain Growers, who are calling conventions for federal ridings.

The executive of the Manitoba Grain Growers. R. L. Henders, M.P., in the centre.

this is a matter for the Dominion Government, it may easily be seen that the most Seagar Wheeler is likely to get is a monument after he dies.

There is more than a little truth in the criticism made of what may be called professional scientists as distinguished from natural scientific investigators like Wheeler. The former are inclined to belittle such efforts, while they cannot, of course, deny that, in Wheeler's case at least, they secure results. There would, for example, be no place for Wheeler on the staff of any Canadian agricultural college. There seems to be no place for him anywhere. He is a man of great modesty who would never push his own case. His achievements are undoubted; but, so far as any gratitude or recognition his own country seems inclined to show, he might starve to death—and then, perhaps, receive a handsome monument.

* * *

The great event of the session, the budget, is down at last; and for the next two weeks the House will be saying what it thinks of it. While there were some unexpected features in it, the changes effected were small, as was expected. The Minister of Finance and other ministers have all through the session been dropping half-veiled allusions which should have prepared the House for something like this. Hon. Frank Carvell began early in the session to prophesy an ugly gap in the country's finances, too big to be made up from income taxes; and Sir Thomas White's announcement of a tariff investigation was meant to warn those who wanted it pared down that there would not be much paring in this budget. But the western grain growers were hardly prepared for the insignificant reductions made in response to the importunities they have been raising all this session. Hon. Mr. Crerar was plainly disgusted as his resignation was in the hands of the Premier while the budget speech was being delivered, and he was not in the House at all. He will be immensely relieved to be clear of his ministerial responsibility. He was very popular with all classes. Sir Robert Borden was greatly perturbed and annoyed at his resignation simultaneously with the budget, as it could not be taken as anything else but the official protest of the western agricultural interests against the budget. Mr. Crerar will probably head the migration from the government side to the cross-benches, which is expected to number not less than fifteen, to join Messrs. Fielding and Pardee, who are already there.

The scene in the lobby when the House rose at six o'clock on budget night, and the members got a chance to talk, was an animated one. Interest naturally centered chiefly around "the grain growers' representatives," as they are usually classed, Messrs. Maharg, Reid and Knox, who lead the "advanced thought" on the government side of the House. They seemed stunned by what had taken place, and it certainly fell far short of their most moderate expectations. "It is merely a drop in the bucket," said Dr. Michael Clark, "and that is the way the west will regard it." "How do you feel now?" I asked Reid of Yorkton. "Well, I feel a good deal like I used to do when I went fishing with a good big worm on my hook, and it all went away in nibbles from fish not worth pulling out of the water."

"It would have been better not to have touched it at all now than to have done this," said Maharg.

Generally speaking, the government divided up on old political lines. Strong Conservatives like Wilson of Saskatoon and Cowan of Regina were able to convince themselves that they had got something, at least. The men who talk that way are preparing for the vote they will give on the budget. It is probable that they would have taken the same stand if the tariff on implements had not been touched. It is just possible that when the west begins to get the telegraph wires busy, as it always does on an occasion like this, some of the members now hanging back may join the hegira to no man's land. If they expect to come back to parliament, they will do so. It may be noted, however, that both Cowan and Wilson—and, in fact, practically all the western representatives who are put down as not likely to be among the discontented—are from city constituencies, where the farmer vote will not affect them heavily.

The Minister of Finance said in his budget speech that a tariff commission would be appointed, probably during the coming autumn, to tour the country and take evidence for the purpose of a complete and scientific revision of the tariff. But judging from the way he expressed himself in the lobby, Sir Thomas White cannot expect much change as a result of that commission's labors. To those who intimated by their questions that they did not think he had gone very far in the way of reductions, he replied abruptly that any greater reductions would put the manufacturers out of business. That being the case, revision—downward at least—would not seem to be probable, or even safe!

Such relief as the tariff granted the agricultural interests, particularly of the west, seems to have been a sort of robbing Peter to pay Paul process. In order to appease the west there had to be a cut in the protection of the manufacturers; in order to appease the manufacturers, there had to be a cut in freight rates; in order to appease the railways for this cut the war duty had to be removed from coal. The process stopped there; no provision seems to have been made for appeasing Nova Scotia, which will be hit by the removal of this coal duty, as it will establish Pennsylvania coal still more firmly in the markets of the Upper Province where it secured an entry during the wartime shortage of Canadian shipping.

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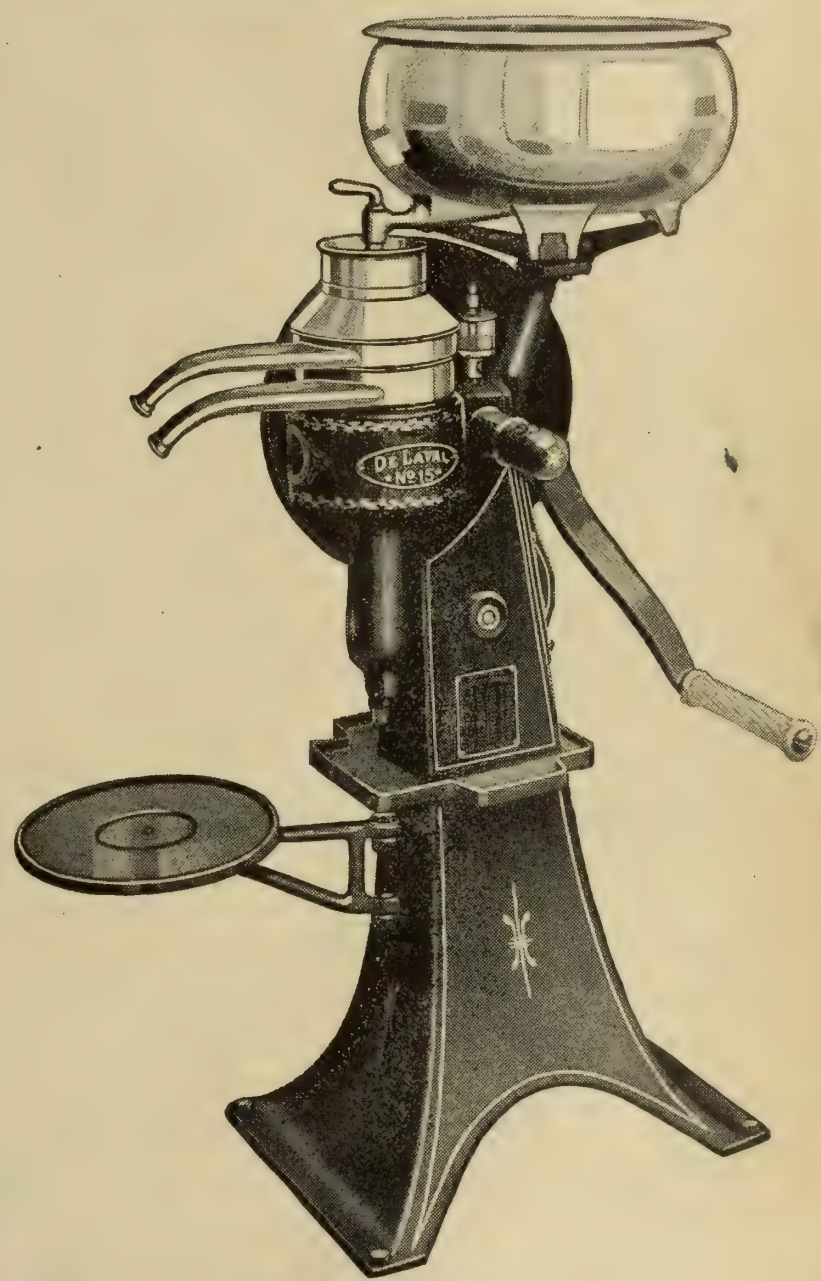

THESE are the days when the farmer is getting the most milk, and with butterfat at its present high price he should be sure to get all the cream.

Many "claims" are made for various cream separators, but the most convincing proof that the De Laval is the cleanest skimming machine is the fact that 98% of the large creameries the world over use the De Laval.

Even if you do not separate as much cream as the large creameryman, you can no more afford to waste cream than he can.

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MONTREAL PETERBORO WINNIPEG VANCOUVER

LABOR AND THE COST OF LIVING

By Major J. E. LATTIMER

THE present lack of labor is not universal. It is only confined to urban centres. There seems to be unanimity of opinion as to its cause. All agree that it is the return of the soldiers that is causing unemployment. One seldom hears the facts proclaimed that the labor situation is similar to that of four or five years ago. But yet it is not greatly different. In 1914 there was considerable unemployment in the cities while labor in the country was scarcely available. Then some workers insisted on fifty cents per hour or free meals. They did not consider the prospect of migrating to the country. Now that wages have risen considerably and numbers are unemployed there is possibly more unrest but not much greater inclination to seek employment on the farm.

At present there is an additional influence which may have the effect of forcing some people to the country. The housing accommodation in the cities is entirely inadequate. Nor shall this shortage be made up the coming summer. Building, like war, is best carried on when some preparation has been made beforehand. There is considerable building activity at present or forecast. But nothing compared to what would be necessary to supply the homes required. In the meantime unemployment is not decreasing as it should at this season of the year.

Conditions should make it an easier matter to procure farm labor. But does it? We learn that $75.00 per month and board is being refused by farm laborers in the West. This appears a fair exchange for unemployment in the city. Yet there seems no immediate rush to benefit by this exchange.

Most people prefer to complain at the high cost of butter—to keeping a cow; to rail against the exorbitant price of hen fruit—to feeding chickens. In fact when a lady living in the city, who knew farm life from having lived there, was asked last June the question: "Are you willing to go out and help gather in the harvest?" her answer expressed the popular demand: "No, I want city life."

The most of us want city life. However, for those who can overcome this antipathy the reward is to-day alluring. It is true a shipment of "fresh eggs" arrived in New York the other day from China. There is no doubt we may be able to enjoy city life here and get our eggs from China, where they only have some 500 people to the square mile while we have two, if we prefer it so. We can also get our butter from New Zealand but it shall not be cheap. We can continue to do this, as a country, but to be consistent let us not denounce so strongly the high cost of living so long as we insist on living in the cities unemployed.

Forty years ago in Iowa a month's wages of a farm laborer would buy an acre of land, so we are told. To-day Iowa is one of the most prosperous agricultural areas in the world. To-day here in Canada in many places, a month's wages on the farm, the major portion of which can be saved, is sufficient to buy an acre of splendid land. What is the matter with that for a solution to the unemployment problem? What is wrong with this prospect as a start in life?

In addition to that it offers a solution to the problem of lack of housing accommodation in the cities. Country homes have not, of late, been overcrowded. Many a respectable country house has been vacated lately as labor left the land. Now that unemployment is our city trouble, and lack of labor in the country our chief complaint, some of these available houses should be again of value.

The returned men are taking advantage of the assistance offered them to locate in the country at a rate which is already alarming to some who think the bonusing people to become tillers of the soil may be overdone.

As long as unemployment is prevalent in the months of May and June in the cities, when building operations are so necessary to provide decent shelter for our population, the danger of too many people being allured to the country need not cause us any very serious alarm.

A happy issue from all our afflictions by way of a general strike is being attempted. Some people who should know better are not only countenancing but aiding this unconstitutional method of redressing grievances. The majority however are not in sympathy with revolutionary methods. Consequently, the general strike promises to be now of short duration.

There seems considerable humor in the situation. The proclamation of Governments, civic, provincial and federal, that law and order shall be maintained must not be taken too literally. We read that law and order everywhere prevail in strike-affected areas. How thankful we should be for that! If one is satisfied with the law and order which allows the necessary services which are being paid for to be eliminated on account of the strike he may be happy. But it is obvious that a minority of labor men have momentarily at least made our boast of law and order something of a joke.

In this way they have antagonized the majority, and fair-minded citizens are working cordially to maintain business in essential industries. In this they are assisted by the farmers in some districts where farmers' motors are at the disposal of committees for the distribution of necessities of life.

It is hardly to be expected that the farmers of this country should greatly sympathize with socialists who believe in the confiscation of land, a six hour day, no provision of capital for the future, a higher wage for the laborers, and a decrease in the cost of living—all in one breath. They require and expect all these things to come over night. *But the labor agitators have not included the farmers when asking a six hour day. That might interfere with some of their ideas upon the cost of living.*

There seems an idea prevalent that the way to decrease the cost of living is to go on strike in the season of the year when labor for production is most necessary.

Nothing excites a greater wail from the ordinary individual to-day than the high price of that luxury, butter. There is more complaint at this than at the price of a limousine with all the load of tariff and tax which it carries, and the purchaser cheerfully pays. The Dairy Commissioner comes forward with the statement that the reason for the high price is scarcity of the article or underproduction. This statement is reasonable enough to be accepted. The advocates of the general strike urge the high cost of living as one of their most serious complaints. To improve matters they attempt to prevent the manufacture of butter, the transport of cream from the country districts, and the delivery of cream to customers. They succeed in getting milk poured down the sewer in Winnipeg and quantities of cream fed to hogs in country districts. A wonderful accomplishment in the cause of reducing the cost of living.

If the idea is a joke it is a good one, but it has its more serious aspect. Yesterday I had occasion to consult professionally a young M.D. He was bitterly opposed to the strike, and in conversation I found that his intention of buying a property and building a home, was to be held in abeyance on account of the unsettled condition of affairs. This illustration is fairly representative of present conditions. Industry is held up, capital intimidated and unemployment prevalent.

Underproduction and idleness emphasized by the general strike at this season of the year pose as a protest against the high cost of living.

Minority rule threatens the existence of the privileges which have become our birthright in the degree of democracy we have so far evolved.

There are some hopeful signs however. The attitude of the farmers in co-operating with the citizens' league in some cases to maintain business is one and the attitude of the returned soldiers is, as is to be expected, reassuring.

The returned men are trying to maintain a somewhat neutral attitude in the labor unrest. As long as war-made plutocrats are as much in evidence as at present it is unreasonable to expect returned men to be particularly enthusiastic in support of present day conditions. They are however working to remove the agitators from this country. In Winnipeg during the strike they have been trying to secure the suppression of Bolshevist literature. In this city some months ago they asked for the suppression of a paper published under the name of the "Soviet." They were the only organization to make this demand. Now they are enquiring into the history of one Carl Berg, one of the strike leaders. Possibly after all it may be shown that there is something in a name, Shakespeare to the contrary notwithstanding.

The removal of some of the mis-leaders of labor at the present time would be opportune. Those who in this country are advocating revolt and destruction are only injuring their own interests and, more important to us, are destroying the liberties and privileges so many have recently died to vindicate and make possible to the whole world.

A Food That Has No Substitute

Continued from page 16

is doubtless true that this does not mean in all cases that a sufficient amount of food is not available, and in a few cases the apparent undernutrition may be due to causes not at all associated with food, but there is already sufficient data available to demonstrate that faulty nutrition is not only present among children, but forms a serious problem in most cities in groups of no small proportions. Can there be anything more deserving our earnest attention than to remove such a blot from our national record as the proven charge that there are tens of thousands of young children today who are not being given the proper nourishment to enable them to complete their growth in a normal manner? These children are being robbed of their most fundamental right to develop their bodies so far as is possible with their inheritance.

During the past few years there have been made in a number of places efforts at furnishing school children food within the school, and in many instances these have given excellent success, but in others the improvement was less marked. These results are to be explained in the fact that there were erroneous notions prevalent in the minds of those who planned the lunches as to what should be furnished the children. Usually it has been necessary to be extremely economical, and where the aim was to give the children the most protein and energy for the least money, this has been done by supplying vegetable soups, beans or cereal products, because on the basis of the time-honored methods of calculations these best suit the purpose. Where this practice has been followed the results have not been satisfactory. It is necessary to give the human infant and the child of early years a liberal supply of milk, and without it he cannot develop normally. I am not alone in taking this stand. Drs. Osborne and Mensel of Yale, and Dr. Lusk of Cornell University Medical College, Dr. Sherman of Columbia are in accord with this view of the necessity of milk in the diet of the child. My experimental work, however, convinced me that if the full span of life is to be realized, and the characteristics of youth are to be maintained, the man must live on the same type of diet which proves satisfactory for the nutrition of the child of three or four years. We are falling far short of realizing the optimum of health and vigor of which we are capable because we are not living as we should.

I shall not dwell longer on the need of a wider use of dairy products. That is established to the satisfaction of everyone who is in a position to judge correctly. The great problem is how are we to secure the dietary reforms which are needed. If these are to be secured, there must be made an effective campaign of education. This must aim first of all at convincing the women who are feeding the families throughout the nation that it matters a great deal what we eat, as well as how it tastes and looks. It has been the practice for many years to instruct these women in terms of protein and energy, and they have become pretty well used to seeing lists of foods set over against their chemical composition, and their energy values, and they have come to think that these are the only factors which they have to consider. In most cases, to be sure, it has been found too perplexing a problem for the housewife to manipulate the necessary calculations in addition to seeking to plan attractive menus, and she has given it up, and proceeded to feed her family what it likes and calls for or approves of at the table. She has fallen back on the policy of trusting to the appetite to guide them successfully in the selection of food. The result is that there are tens of thousands of mothers in this country today who are tempting their families with the choicest meats, the lightest bread, and an abundance of sweets, in the belief that "because their systems call for these things" they must be what they actually need.

Teach the Facts About Milk

It is true that the public has been told for years that milk is the greatest of all human foods, but they were not told in the right way. They were told at the same time by others that whole wheat, rolled oats, puffed or flaked grains, and baked beans, and a dozen other food products with no especially valuable properties, were the most valuable of all foods for their children and themselves, and the advertising matter appeared convincing in all cases. Dairy products were not called for because the public has not seen the return on the investment. It is time that a campaign of education is undertaken which shall be so effective that hereafter it shall be a regular part of the instruction of every child in the public schools to lay down definite rules for the selection of food in so far as this is necessary or desirable. How is this to be done?

The place to attack the problem is in the public schools. But before this can be done most effectively it will be necessary to secure some better demonstration data than are at present available. We know beforehand from the results of animal experiments and from the experimental trials of school

lunches made in a somewhat unsatisfactory manner in most instances, and from the results of very extensive surveys of the health conditions among school children in many cities, what the outcome will be. Under-nutrition on a large scale is in evidence so frequently in the poorer sections of large cities that it requires only the investment of a suitable amount of funds to show what can be done for these children by improvement of their diet. Reports have recently come to me from two sources of the results of the application in schools of the principles which I have laid down during the last year and a half regarding the necessity of planning the diet so as to include a suitable content of the **protective foods**, and these reports are of the most encouraging nature. Is the dairy industry going to wait for a free demonstration of the value of milk and then make use of such data as may become available, be it complete and satisfactory, or only half satisfactory because of lack of proper planning, too short feeding periods, or inability for lack of assistance, to collect all the observations which should have been made.

Recently a letter was forwarded to me by a woman in a Western state containing a request from certain interests who had vegetable oils to sell that the club women of that state should get behind a propaganda for promoting the use of vegetable oils for human foods. Another instance has been brought to my attention of the direct advertisement to school children of certain of the most ordinary food materials by the use of so-called educational movies. Your competitors are wider awake than you producers of dairy products are today. Will they still be so to-morrow?

The experimental data for your cause is now in great measure available, and it came to you as a gift and as a surprise. You can depend upon the steady but slow triumph of your cause, but I strongly urge, for the benefit of mankind generally, and for your own prosperity, that you take this matter in hand and lose no time in making possible the complete demonstration of how far the faulty selection of food, as well as the lack of a sufficient amount of food, is responsible for stunting, low vigor, and susceptibility to disease among school children. This will require the expenditure of a considerable amount of money, but such a laudable cause is but seldom presented to the philanthropist. I am presenting it to you as a business proposition, and in the interest of the nation. The condition of many thousands of children is so bad as to be now attracting widespread attention, and the relation of your industry to the problem is closer. Will it not be possible for you to meet this responsibility?

In any industry involving the interests of so many small producers and distributors it is necessary in order that the interests of the industry be safeguarded and properly promoted, that there be an efficient national organization to correlate the efforts of smaller organizations throughout the country. Such an organization is apparently now maturing in the National Dairy Council. I believe there are great possibilities in this organization. It is through such a plan as this that effective work can be done in carrying to the people the information which I am so anxious they should have. I commend to your attention both these enterprises, viz., the strengthening of your national organization whose duties will be the promotion of the interests of the industry in the broadest sense, and the prompt focusing of your attention on the conduct of demonstrations with human beings on a large scale, for the purpose of making clear the vital importance of the use of milk as a means of raising the plane of health in no small part of our population.

WHEN TO CUT GRASS AND CLOVER FOR HAY

IT is regrettable that it is a too general practice among farmers in Canada to leave the hay crops to be cut much too long. There are, as a matter of fact, a large number of farmers who delay the cutting of the hay crop far beyond the time when it would pay them the most to cut. In many cases the reason for the delay is that it is a general belief that a somewhat increased tonnage may be secured if cutting is postponed, and in other cases the late cutting is practised because it is even believed that a better quality of hay may be obtained than if the cutting were done earlier.

In the case of Eastern Canada, where mixed clover and timothy, or timothy alone, are the fundamental hay plants, a few suggestions based on experience may be found not to be out of order.

Timothy and red clover are the standard hay plants which universally are grown together. The clover is contributing the bulk of the hay crop the year after seeding, and the timothy is furnishing the bulk of the hay the following year or years. Supposing that a farmer has a field of mixed clover and timothy, what would be the best time for him to cut it for hay? The clover develops early and is ready to cut some time before the timothy has reached its best stage. Shall the farmer cut the hay when the red clover is in its prime, or shall he wait until the timothy is at its best? The answer is: Cut when the clover is at its best, notwithstanding that the timothy mixed with it may not be as well developed as might be desired, for the reason that the clover is the more valuable part of the mixture. But cutting early, the clover is given a chance to recuperate and to produce a remunerative second crop, which it might fail to do if the cutting for hay is delayed too long for the sake of the timothy.

In case timothy forms the principal part of the hay crop, which it generally does two years or more after seeding to hay, it is important to handle it for hay in a proper manner. Timothy, like most other grasses, has a period of its own, when it has the greatest feeding value and when the hay made from it is apt to furnish the maximum feeding value per acre. This period is the time of blossoming. At that time timothy is richest in flesh and milk producing constituents, and, if cut for hay when in bloom, the best quality hay may consequently be realized. It is a mistake to believe that better crops may be secured if cutting is somewhat delayed. Some slight increase in the yield may be obtained, but what is gained in quantity is lost in quality and feeding value, pound for pound.

Under the circumstances, early cutting of timothy for hay must of necessity be recommended as the most economical method of securing a hay of the highest possible value.

SNAPDRAGONS

By Elizabeth Housser

SOMETIMES this plant is catalogued as a perennial, but in Canada it usually succumbs to our winters. In spite of this, it is well worth growing, giving quantities of bloom in glowing shades of rose, pink and maroon as well as yellow. It is one of the most useful plants for hot, dry, sun-scorched spots, thriving in such places like a cactus.

Plant seed early, preferably in flats, in very fine soil. The seed is exceptionally fine and slow to germinate. Transplant to open ground when four or five leaves have formed.

Snapdragons may be had in three heights, but the "Intermediate" is best for ordinary use. The "Tall" generally requires staking and the Dwarf is not good for cutting.

"Melrose" is the best pink variety, and "Goldcrest" a splendid gold.

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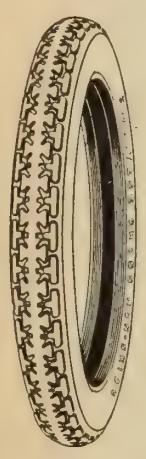

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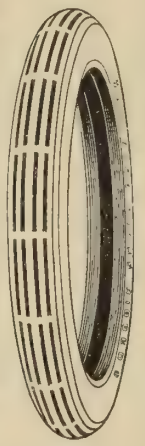

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Horses and Carhartt Overalls

I know of farmers who have none but the best breed of horses, who are yet satisfied with the second-rate when it comes to overalls. Where's the sense of it? Surely the same considerations that impel a man to choose a first-class horse should also induce him to buy first-class overalls. The one big thing you will like about my Carhartt Overalls is that they are thoroughbred all the way through, and that means thoroughbred service, neat and finished tailoring and heavy denim cloth. Every seam is double stitched; every button is reinforced, sizes are correct, extra-large handy pockets, high back, high bib, and generous seat. Behind it all is my guarantee of satisfaction and 25 years of knowing how.

Hamilton Carhartt

President

Hamilton Carhartt Cotton Mills, Limited

Toronto Montreal Winnipeg Vancouver

TRUCK FARMING

Marketing Onions

By F. B. HOUSSER

THE first of July is none too early for onion growers to begin thinking of marketing problems for this season's crop. There are plenty of men who can raise a good patch of onions. There are very few who know how to sell them to the best advantage. The average man-on-the-land is a gambler. He prefers to take his chance and wait for the tone of the fall market. This is all right if he can afford proper storage facilities, but the man with a two or three-acre patch is usually forced to dispose of his crop direct from the field. These are years when a high price may be realized by a last minute sale, but it more often happens that he is compelled to dump his onions on a glutted market, with the result that his season's work brings disappointing returns.

After a season or two of raising bumper crops and letting somebody else take the cream of the profit I decided it was time to conduct an investigation and, as they say in the city, reorganize the sales end of my business.

I had been selling, like so many others, on the eleventh hour basis. Our place was close to the city and I figured with a topping machine I ought to be able to beat the Leamington crop by a good week or ten days, thus getting the highest price which the books tell us always goes to the early comers.

This was all very well as far as it went, but I had been stupid enough to think that the buyers in the city were going to wait till the last minute, too. When I found they hadn't, it threw me out considerably in my calculations. What I found was that the men who bought onions had either closed with their growers two months before or else they refused to buy at all until the Leamington crop began to come in. The result was that I sold through a commission man and took my chance with every one else.

I knew that the great bulk of onions shipped in to Toronto ultimately found their way to the lumber camps in Northern Ontario and Quebec. A large wholesale house in the city had offered me $1.35 a bag in July for delivery in October and it was well known among the trade that this firm shipped thousands of bags up north every season. I therefore set myself about to learn who this firm's customers were and what they were in the habit of paying for onions.

The man at the head of this firm was an honest man and his customers got their supplies at an honest price, but I found it was quite a common thing for some of the wholesale houses to charge as high as $4 a bag f. o. b. shipping points for stuff that cost them $1.25 to $1.50 a bag, and this little bit of information throws a significant sidelight on one of the causes of our present high cost-of-living problem.

Here, then, was my logical market with practically unlimited possibilities. To go after it, of course, meant to antagonize the commission men, but on honest competition there was no doubt that I could make a handsome profit for myself and at the same time render these people in the north a real service.

The season was getting late, but I decided to try it out.

A list of prospects was obtained from a lumberman friend and I set to work on my typewriter to strike off personal letters to each firm. I offered to sell them onions at $2 a bag f. o. b. my own station and guaranteed every bag free from culls and properly cured for good keeping.

Along with each letter we mailed, by parcel post, two average onions sewn up in a typewritten tag flat on the bottom. It was a real novelty advertising stunt.

Practically every prospect written replied promptly. Most of them had bought their supply, but those who hadn't, bought all the way from ten to seventy-five bags. The others all asked me to get in touch with them early the next season. Those who placed orders sent me a cheque as soon as they received their shipments. There seems no good reason why this same plan could not be successfully carried out with beans and potatoes.

The day may be coming when growers will merchandise the products of their soil as the manufacturer merchandises the output of his factory. For the man who wishes to grow on a large scale an advertising campaign in the lumbermen's journals would assist him as much as the man who makes planing lathes.

The main thing to be borne in mind is to *start early* and follow your letters up with real selling material. Ship early to avoid frost in transit, for remember that cold weather comes quicker in Algoma than it does in Southern Ontario. Don't ask a price that will put you in the profiteer class, but keep records of your cost of production and set your price accordingly. In other words, treat your customers exactly as you would like to be treated.

In contracting for your crop with a wholesale house the grower is generally asked to tender. Here is where the average truck gardener finds himself at a loss. He is puzzled what price to ask for a crop not yet ripe and with no knowledge of future weather conditions. The same question arises in soliciting business from a lumber firm and the necessity of installing an accurate cost system is again shown.

If my memory is not at fault I think I once heard the secretary of the Ontario Vegetable Growers' Association say that of some 700 growers with whom he talked only **two** knew the cost of production. It requires patient effort to obtain this information, but fifteen minutes a day will keep a complicated set of books up to date and repay the grower for his pains many times over. There are excellent books on the subject containing detailed explanations, and the Dominion Government has devised a plan which can be had for the asking.

Another convenient and almost essential requirement to the man who wants to do business intelligently is a typewriter. Second-hand machines can be bought for a moderate amount, or, if it is not needed the year around, one can be rented by the month for a very few dollars.

With a typewriter, carbon copies of every letter can be kept on file and referred to at any time. Once having used one, you would never think of returning to the old method any more than a progressive farmer would consider plowing or going to town with a yoke of oxen. Business men like to do business in a business-like way, and a well-typed letter makes just the same good impression on a prospective customer as a neat, tidy appearance does with a salesman soliciting business.

Whether or not you follow out any ideas conveyed in this article, it will pay the most successful growers to check over the selling end of the truck farming business more closely than is customary with the average man who grows things.

WHAT FRUIT PRICES WILL PREVAIL

Continued from page 9

the shortage of help and the inspection department worked overtime in an endeavor to let nothing go out that was not up to the standard. But the system now being advocated provides for a rigid Government inspection at point of loading before car can be moved. This must be recognized by the purchaser or consignee as final. Our present haphazard system invites claims (some good, but most fraudulent) and no end of bickerings and adjustments. In fact, it is plenty well established that no matter how fine a car may be, some purchasers always register a claim, I suppose from force of habit, hoping to get some reduction in price.

But with the adoption of the proposed system the inspector's certificate would be nailed inside the car. This would constitute the consignor's release and the consignee's guarantee and no rebates would be entertained and no unsavory disputes could arise.

WHEN THE WAR-TIME'S ELECTION ACT DIES

Continued from page 14

sioner. This would remove the actual control of the elections from the Government in power when they were being held, something which has long been urged as desirable by both parties. Whether this will be done or not is not settled, but there is a likelihood that it will be. Under the old system, the Clerk of the Crown in Chancery sends out and receives all necessary documents, and the Secretary of State administers the elections under the direction of the Cabinet. Under the suggested system, the official administering the elections would have absolute control and would be an independent official with somewhat the status of the Auditor-General, so far as immunity from dismissal would go.

AN OLD FRIEND

Jarvis, Ont.

Enclosed please find Two Dollars, payment for FARMERS' MAGAZINE. *The* FARMERS' MAGAZINE *was a great friend to me before I went to war, and now that I am home again, I wish to continue as before.*

C. ROYCE.

KEEPING CUT DAHLIAS FRESH

BY HARRIET POST IN "COUNTRY LIFE"

AT the dahlia show in New York as I looked at the growers unpacking their exhibits, cutting the stems off short and even then losing many of their best blossoms through wilting, I wondered if our method of making the flowers last after cutting would not be of interest.

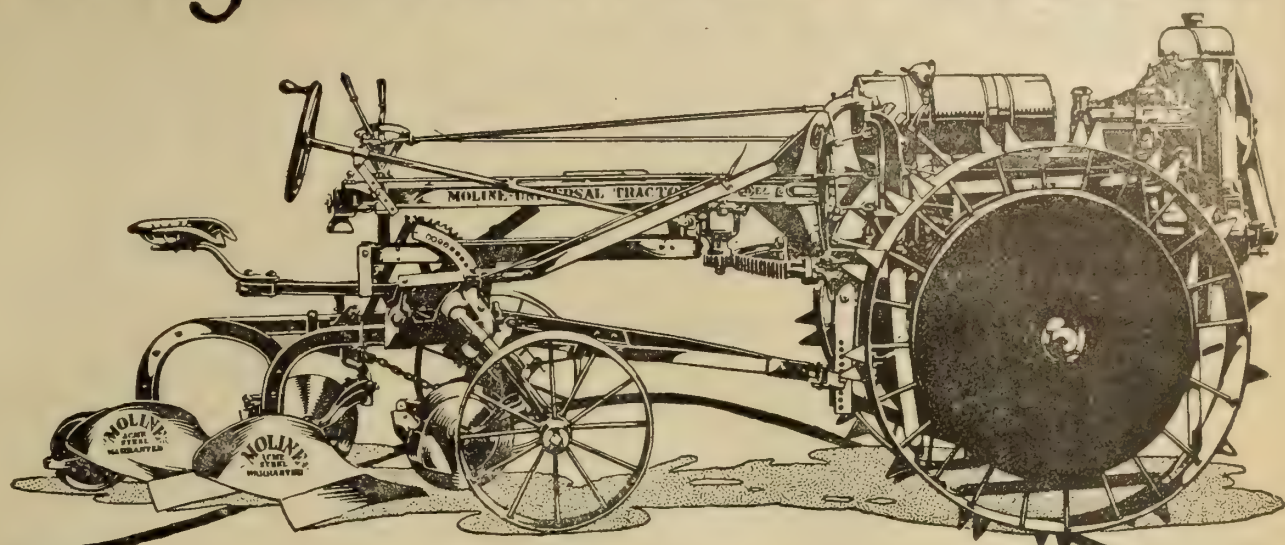
Of course when the Japanese taught us to singe our poinsettias there was saved to us for decorative purposes our most charming flower of the Christmas season; the same process has been tried on the dahlias with more or less success; less, when you stand before two lighted candles with a dahlia in each hand and try to char the ends of the watery, dripping things—for charred to a white ash they must be to be sure of them; more, when with six in each hand one holds them in the roaring blaze of a kerosene torch.

There is still a better way, however; get a broad-mouthed bottle with rubber cork, or a glass fruit jar; have four ounces of commercial nitric acid poured into it by the chemist (who will warn you of its burning qualities) and donning thick gardening gloves, for safety, dip eight or ten stems at a time into the acid; take them out after thirty seconds and place them in a jar of warm water, say 90 degrees, and your dahlias will last for days—sometimes, if the rooms are cool, for quite a week. This is not an experiment, I have done it every day for two months at a stretch and have never had a failure.

At the dahlia show I noticed one man dipping the stems of his flowers into a tin can, I thought rather surreptitiously, but there were no fumes; if he had made the same discovery as ours he must have been using the acid in a diluted form, as he was much more casual about it than he could have been with the acid full strength.

What happens is probably one of two things. The dahlia is what is known as a bleeder—the stalks and stems as well as the root. It is essential to their lasting that this dipping of their juices be stopped, that the sap in their stems be held there. Cauterizing or very thorouga singeing does this, and at the same time the great hollow stalk reserves action enough to take up all the water it needs. The other explanation, possibly the true one, might be that without the acid a chemical dialysis takes place which the flower cannot withstand.

Why a Two Wheel Tractor



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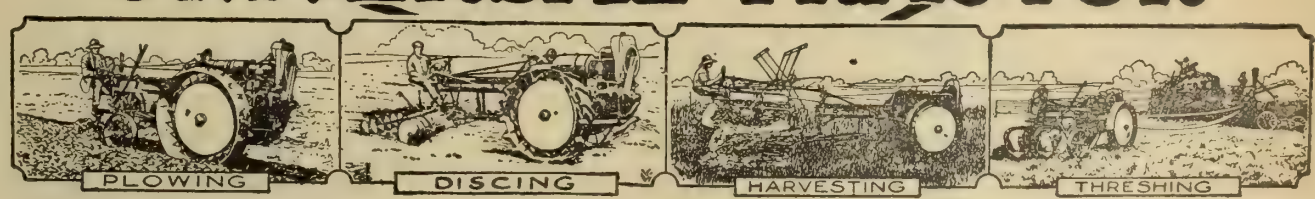

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WILDFIRE

A Tale of Ranch Life, a Wonderful Horse and a Girl

By ZANE GREY

Author of "The Rainbow Trail," "Riders of the Purple Sage," "The Light of the Western Stars."

SYNOPSIS

LIN SLONE, a wild-horse hunter, trails a magnificent, wild, red stallion — which he names Wildfire — for several months, from the Utah ranges across the Grand Canon of the Colorado. At last, when almost starving, he ropes the horse, but is thrown and hurt.

On the south side of the Grand Canon is a settlement called Bostil's Ford. Bostil is a rancher, whose affections are divided between his horses and his eighteen-year-old daughter, Lucy. He is very jealous of Creech, another rancher, who also owns some splendid horses. The annual races are soon to take place, and Bostil fears that his favorite, Sage King, may be beaten by Creech's Blue Roan. Creech lives on the other side of the river, where there is no pasture during the summer, and Bostil, who owns the boat at the Ford, is accustomed to bring Creech's horses across every spring. It is now June, but Bostil has ignored all Creech's messages for the boat. Joel, Creech's half-witted son, bears a grudge against Lucy, on account of a practical joke she once played on him, and has often swore revenge. Cordts, a horse-thief, has also threatened to carry her off.

One day Lucy, riding alone in the desert, finds Slone lying helpless and renders him assistance. The next day she brings him food and clothes, but, at his request, says nothing about him at the Ford. Wildfire takes a fancy to Lucy and Slone agrees to let her ride him in the races. She comes in secret every day to train Wildfire, and just before the race-day Slone declares his love for her. Bostil cuts the boat adrift. The next morning the river is in flood, and Creech's horses cannot be brought across.

The races take place and Lucy, on Wildfire, wins the big event. Slone introduces himself to Bostil and they are proceeding homeward when Sears, one of Cordts' gang, holds up the party and attempts to steal Wildfire.

BOSTIL'S face turned dark-blood color and his neck swelled. "By Gawd, Sears! You aint a-goin' to steal this boy's hoss!"

"Shut up!" hissed the horse-thief. He pushed a gun close to Bostil. "I've always laid fer you! I'm achin' to bore you now. I would but fer scarin' this hoss. If you yap again I'll *kill you*, anyhow, an' take a chance!"

All the terrible hate and evil and cruelty and deadliness of his kind burned in his eyes and stung in his voice.

"Sears, if it's my horse you want you needn't kill Bostil," spoke up Slone. The contrast of his cool, quiet voice eased the terrible strain.

"Lead him round hyar!" snapped Sears.

Wildfire appeared more shy of the horses back of him than of the men. Slone was able to lead him, however, to within several paces of Sears. Then Slone dropped the reins. He still held a lasso which was loosely coiled, and the loop dropped in front of him as he backed away.

Sears sheathed the left-hand gun. Keeping the group covered with the other, he moved backward, reaching for the hanging reins. Wildfire snorted, appeared about to jump. But Sears got the reins. Bostil, standing like a stone, his companions also motionless, could not help but admire the daring of this upland horse-thief. How was he to mount that wild stallion? Sears was noted for two qualities—his nerve before men and his skill with horses. Assuredly he would not risk an ordinary mount. Wildfire began to suspect Sears—to look at him instead of the other horses. Then quick as a cat Sears vaulted into the saddle. Wildfire snorted and lifted his forefeet in a lunge that meant he would bolt.

Sears in vaulting up had swung the gun aloft. He swept it down, but waveringly, for Wildfire had begun to rear.

Bostil saw how fatal that single instant would have been for Sears if he or Holly had a gun.

Something whistled. Bostil saw the leap of Slone's lasso—the curling, snaky dart of the noose which flew up to snap around Sears. The rope sung taut. Sears was swept bodily clean from the saddle, to hit the ground in sudden impact.

Almost swifter than Bostil's sight was the action of Slone—flashing by—in the air—himself on the plunging horse. Sears shot once, twice. Then Wildfire bolted as his rider whipped the lasso round the horn. Sears, half rising, was jerked ten feet. An awful shriek was throttled in his throat.

A streak of dust on the slope—a tearing, parting line in the sage!

Bostil stood amazed. The red stallion made short plunges. Slone reached low for the tripping reins. When he straightened up in the saddle Wildfire broke wildly into a run.

It was characteristic of Holley that at this thrilling, tragic instant he walked over into the sage to pick up his gun.

"Throwed a gun on me, got the drop, an' pitched mine away!" muttered Holley, in disgust. The way he spoke meant that he was disgraced.

"My Gawd! I was scared thet Sears would get the hoss!" rolled out Bostil.

Holley thought of his gun; Bostil thought of the splendid horse. The thoughts were characteristic of these riders. The other men, however, recovering from a horror-broken silence, burst out in acclaim of Slone's feat.

"Dick Sears' finish! Roped by a boy rider!" exclaimed Cal Blinn, fervidly.

"Bostil, that rider is worthy of his horse," said Wetherby. "I think Sears would have bored you. I saw his finger pressing—pressing on the trigger. Men like Sears can't help but pull at that stage."

"Thet was the quickest trick I ever seen," declared Macomber.

They watched Wildfire run down the slope, out into the valley, with a streak of rising dust out behind. They all saw when there ceased to be that peculiar rising of dust. Wildfire appeared to shoot ahead at greater speed. Then he slowed up. The rider turned him and faced back toward the group, coming at a stiff gallop. Soon Wildfire breasted the slope, and halted, snorting, shaking before the men. The lasso was still trailing out behind, limp and sagging. There was no weight upon it now.

Bostil strode slowly ahead. He sympathized with the tension that held Slone; he knew why the rider's face was gray, why his lips only moved mutely, why there was horror in the dark, strained eyes, why the lean, strong hands, slowly taking up the lasso, now shook like leaves in the wind.

There was only dust on the lasso. But Bostil knew—they all knew that none the less it had dealt a terrible death to the horse-thief.

Somehow Bostil could not find words for what he wanted to say. He put a hand on the red stallion—patted his shoulder. Then he gripped Slone close and hard. He was thinking how he would have gloried in a son like this young, wild rider. Then he again faced his comrades.

"Fellers, do you think Cordts was in on thet trick?" he queried.

"Nope. Cordts was on the square," replied Holley. "But he must have seen it comin' an' left Sears to his fate. It sure was a fittin' last ride for a hoss-thief."

Bostil sent Holley and Farlane on ahead to find Cordts and Hutchinson, with their comrades, to tell them the fate of Sears, and to warn them to leave before the news got to the riders.

The sun was setting golden and red over the broken battlements of the canons to the west. The heat of the day blew away on a breeze that bent the tips of the sage-brush. A wild song drifted back from the riders to the fore. And the procession of Indians moved along, their gay trappings and bright colors beautiful in the fading sunset light.

When Bostil and his guests arrived at the corrals, Holley, with Farlane and other riders, were waiting.

"Boss," said Holley, "Cordts an' his outfit never rid in. They was last seen by some Navajos headin' for the canons."

"Thet's good!" ejaculated Bostil, in relief. "Wal, boys, look after the hosses. . . . Slone, just turn Wildfire over to the boys with instructions, an' feel safe."

Farlane scratched his head and looked dubious. "I'm wonderin' how safe it'll be fer us."

"I'll look after him," said Slone.

Bostil nodded as if he had expected Slone to refuse to let any rider put the stallion away for the night. Wildfire would not go into the barn, and Slone led him into one of the high-barred corrals. Bostil waited, talking with his friends, until Slone returned, and then they went toward the house.

"I reckon we couldn't get inside Brack's place now," remarked Bostil. "But in a case like this I can scare up a drink." Lights from the windows shone bright through the darkness under the cottonwoods. Bostil halted at the door, as if suddenly remembering, and he whispered huskily: "Let's keep the women from learnin' about Sears—to-night anyway."

Then he led the way through the big door into the huge living-room. There were hanging-lights on the walls and blazing sticks on the hearth. Lucy came running in to meet them. It did not escape Bostil's keen eyes that she was dressed in her best white dress. He had never seen her look so sweet and pretty, and, for that matter, so strange. The flush, the darkness of her eyes, the added something in her face, tender, thoughtful, strong—these were new. Bostil pondered while she welcomed his guests. Slone, who had hung back, was last in turn. Lucy greeted him as she had the others. Slone met her with awkward constraint. The gray had not

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left his face. Lucy looked up at him again, and differently.

"What—what has happened?" she asked.

It annoyed Bostil that Slone and all the men suddenly looked blank.

"Why, nothin'," replied Slone, slowly, "'cept I'm fagged out."

Lucy, or any other girl, could have seen that he was evading the truth. She flashed a look from Slone to her father.

"Until to-day we never had a big race that something dreadful didn't happen," said Lucy. "This was my day—my race. And, oh! I wanted it to pass without—without—"

"Wal, Lucy dear," replied Bostil, as she faltered. "Nothin' came off thet'd make you feel bad. Young Slone had a scare about his hoss. Wildfire's safe out there in the corral, an' he'll be guarded like the King an' Sarch. Slone needs a drink an' somethin' to eat, same as all of us."

Lucy's color returned and her smile, but Bostil noted that, while she was serving them and brightly responsive to compliments, she gave more than one steady glance at Slone. She was deep, thought Bostil, and it angered him a little that she showed interest in what concerned this strange rider.

Then they had dinner, with twelve at table. The wives of Bostil's three friends had been helping Aunt Jane prepare the feast, and they added to the merriment. Bostil was not much given to social intercourse—he would have preferred to be with his horses and riders—but this night he outdid himself as host, amazed his sister Jane, who evidently thought he drank too much, and delighted Lucy. Bostil's outward appearance and his speech and action never reflected all the workings of his mind. No one would ever know the depth of his bitter disappointment at the outcome of the race. With Creech's Blue Roan out of the way, another horse, swifter and more dangerous, had come along to spoil the King's chance. Bostil felt a subtly increasing covetousness in regard to Wildfire, and this colored all his talk and action. The upland country, vast and rangy, was for Bostil too small to hold Sage King and Wildfire unless they both belonged to him. And when old Cal Blinn gave a ringing toast to Lucy, hoping to live to see her up on Wildfire in the grand race that must be run with the King, Bostil felt stir in him the birth of a subtle, bitter fear. At first he mocked it. He—Bostil—afraid to race! It was a lie of the excited mind. He repudiated it. Insidiously it returned. He drowned it down—smothered it with passion. Then the ghost of it remained, hauntingly.

After dinner Bostil with the men went down to Brackton's, where Slone and the winners of the day received their prizes.

"Why, it's more money than I ever had in my whole life!" exclaimed Slone, gazing incredulously at the gold.

Bostil was amused and pleased, and back of both amusement and pleasure was the old inventive, driving passion to gain his own ends.

Bostil was abnormally generous in many ways; monstrously selfish in one way.

"Slone, I seen you didn't drink none," he said, curiously.

"No; I don't like liquor."

"Do you gamble?"

"I like a little bet—on a race," replied Slone, frankly.

"Wal, thet aint gamblin'. These fool riders of mine will bet on the switchin' of a hoss's tail." He drew Slone a little aside from the others, who were interested in Brackton's delivery of the different prizes. "Slone, how'd you like to ride for me?"

Slone appeared surprised. "Why, I never rode for anyone," he replied, slowly. "I can't stand to be tied down. I'm a horse-hunter, you know."

Bostil eyed the young man, wondering what he knew about the difficulties of the job offered. It was no news to Bostil that he was at once the best and the worst man to ride for in all the uplands.

"Sure, I know. But thet doesn't make no difference," went on Bostil, persuasively. "If we got along—wal, you'd save some of thet yellow coin you're jinglin'. A roamin' rider never builds no corral!"

"Thank you, Bostil," replied Slone, earnestly. "I'll think it over. It would seem kind of tame now to go back to wild-horse wranglin', after I've caught Wildfire. I'll think it over. Maybe I'll do it, if you're sure I'm good enough with rope an' horse."

"Wal, by Gawd!" blurted out Bostil. "Holley says he'd rather you throwed a gun on him than a rope! So would I. An' as for your handlin' a hoss, I never seen no better."

Slone appeared embarrassed and kept studying the gold coins in his palm. Someone touched Bostil, who, turning, saw Brackton at his elbow. The other men were now bantering with the Indians.

"Come now while I've got a minnit," said Brackton taking up a lantern "I've somethin' to show you."

Bostil followed Brackton, and Slone came along. The old man opened a door into a small room, half full of stores and truck. The lantern only dimly lighted the place.

"Look thar!" And Brackton flashed the light upon a man lying prostrate.

Bostil recognized the pale face of Joel Creech. "Brack! . . What's this? Is he dead?" Bostil sustained a strange, incomprehensible shock. Sight of a dead man had never before shocked him.

"Nope, he aint dead, which if he was might be good for the community," replied Brackton. "He's only fallen in a fit. Fust off I reckoned he was drunk. But it aint thet."

"Wal, what do you want to show him to me for?" demanded Bostil, gruffly.

"I reckoned you oughter see him."

"An' why, Brackton?"

Brackton set down the lantern and, pushing Slone outside, said: "Jest a minnit, son," and then he closed the door. "Joel's been on my hands since the flood cut him off from home," said Brackton. "An' he's been some trial. But nobody else would have done nothin' for him, so I had to. I reckon I felt sorry for him. He cried like a baby thet had lost its mother. Then he gets wild-lookin' an' raved around. When I wasn't busy I kept an eye on him. But some of the time I couldn't, an' he stole drinks, which made him wuss. An' when I seen he was tryin' to sneak one of my guns, I up an' gets suspicious. Once he said, 'My dad's hosses are goin' to starve, an' I'm goin' to kill somebody!' He was out of his head an' dangerous. Wal, I was worried some, but all I could do was lock up my guns. Last night I caught him confabin' with some men out in the dark, behind the store. They all skedaddled except Joel, but, I recognized Cordts. I didn't like this, nuther. Joel was surly an' ugly. An' when one of the riders called him he said: 'Thet boat *never drifted off*. Fer the night of the flood I went down there myself an' tied the ropes. They never come untied. Somebody cut them—jest before the flood—to make sure my dad's hosses couldn't be crossed. Somebody figgered the river an' the flood. An' if my dad's hosses starve I'm goin' to kill somebody!'"

Brackton took up the lantern and placed a hand on the door ready to go out.

"Then a rider punched Joel—I never seen who—an' Joel had a fit. I dragged him in here. An' as you see, he aint come to yet."

"Wal, Brackton, the boy's crazy," said Bostil.

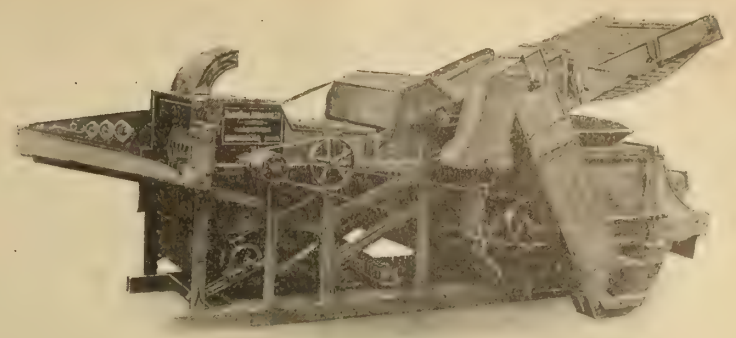
"So I reckon. An' I'm afeared he'll burn us out—he's crazy on fires, anyway—or do somethin' like."

"He's sure a problem. Wal, we'll see," replied Bostil, soberly.

And they went out to find Slone waiting. Then Bostil called his guests, and with Slone also accompanying him, went home.

Bostil threw off the recurring gloom, and he was good-natured when Lucy came to his room to say good night. He knew she had come to say more than that.

"Hello, daughter!" he said. "Aren't



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you ashamed to come facin' your poor old dad?"

Lucy eyed him dubiously. "No, I'm not ashamed. But I'm still a little—afraid."

"I'm harmless, child. I'm a broken man. When you put Sage King out of the race you broke me."

"Dad, that isn't funny. You make me an—angry when you hint I did something underhand."

"Wal, you didn't consult *Me.*"

"I thought it would be fun to surprise you all. Why, you're always delighted with a surprise in a race, unless it beats *you.* . . . Then, it was my great and only chance to get out in front of the King. Oh, how grand it'd have been! Dad, I'd have run away from him the same as the others!"

"No, you wouldn't," declared Bostil.

"Dad, Wildfire can beat the King!"

"Never, girl! Knockin' a good-tempered hoss off his pins aint beatin' him in a runnin'-race."

Then father and daughter fought over the old score, the one doggedly, imperturbably, the other spiritedly, with flashing eyes. It was different this time, however, for it ended in Lucy saying Bostil would never risk another race. That stung Bostil, and it cost him an effort to control his temper.

"Let thet go now. Tell me—all about how you saved Wildfire, an' Slone, too."

Lucy readily began the narrative, and she had scarcely started before Bostil found himself intensely interested. Soon he became absorbed. That was the most thrilling and moving kind of romance to him, like his rider's dreams.

"Lucy, you're sure a game kid," he said, fervidly, when she had ended. "I reckon I don't blame Slone for fallin' in love with you."

"Who said *that?*" inquired Lucy.

"Nobody. But it's true—aint it?"

She looked up with eyes as true as ever they were, yet a little sad, he thought, a little wistful and wondering, as if a strange and grave thing confronted her.

"Yes, Dad—it's true," she answered, haltingly.

"Wal, you didn't need to tell me, but I'm glad you did."

Bostil meant to ask her then if she in any sense returned the rider's love, but unaccountably he could not put the question. The girl was as true as ever—as good as gold. Bostil feared a secret that might hurt him. Just as sure as life was there and death but a step away, some rider, sooner or later, would win this girl's love. Bostil knew that, hated it, feared it. Yet he would never give his girl to a beggarly rider. Such a man as Wetherby ought to win Lucy's hand. And Bostil did not want to know too much at present; he did not want his swift-mounting animosity roused so soon. Still he was curious, and, wanting to get the drift of Lucy's mind, he took to his old habit of teasing.

"Another moonstruck rider!" he said. "Your eyes are sure full moons, Lucy. I'd be ashamed to trifle with these poor fellers."

"Dad!"

"You're a heartless flirt—same as your mother was before she met *me.*"

"I'm not. And I don't believe mother was, either," replied Lucy. It was easy to strike fire from her.

"Wal, you did wrong to ride out there day after day meetin' Slone, because—young woman—if he ever has the nerve to ask me for you I'll beat him up bad."

"Then you'd be a brute!" retorted Lucy.

"Wal, mebbe," returned Bostil, secretly delighted and surprised at Lucy's failure to see through him. But she was looking inward. He wondered what hid there deep in her. "But I can't stand for the nerve of thet."

"He—he means to—to ask you."

"The h— . . . . A-huh!"

Lucy did not catch the slip of tongue. She was flushing now. "He said he'd never have let me meet him out there alone—unless—he—he loved me—and as our neighbors and the riders would learn of it—and talk—he wanted you and them to know he'd asked to—t—o marry me."

"Wal, he's a square young man!" ejaculated Bostil, involuntarily. It was hard for Bostil to hide his sincerity and impulsiveness; much harder than to hide unworthy attributes. Then he got back on the other track. "Thet'll make me treat him decent, so when he rides up to ask for you I'll let him off with, 'No!'"

Lucy dropped her head. Bostil would have given all he had, except his horses, to feel sure she did not care for Slone.

"Dad—I said—'No'——for myself," she murmured.

This time Bostil did not withhold the profane word of surprise. ". . . . So he's asked you, then? Wal, wal! When?"

"To-day—out there in the rocks where he waited with Wildfire for me. He—he—"

Lucy slipped into her father's arms, and her slender form shook. Bostil instinctively felt what she then needed was her mother. Her mother was dead, and he was only a rough, old, hard rider. He did not know what to do—to say. His heart softened and he clasped her close. It hurt him keenly to realize that he might have been a better, kinder father if it were not for the fear that she would find him out. But that proved he loved her, craved her respect and affection.

"Wal, little girl, tell me," he said.

"He—he broke his word to me."

"A-huh! Thet's too bad. An' how did he?"

"He—he—" Lucy seemed to catch her tongue.

Bostil was positive she had meant to tell him something and suddenly changed her mind. Subtly the child vanished—a woman remained. Lucy sat up self-possessed once more. Some powerfully impelling thought had transformed her. Bostil's keen sense gathered that what she would not tell was not hers to reveal. For herself, she was the soul of simplicity and frankness.

"Days ago I told him I cared for him," she went on. "But I forbade him to speak of it to me. He promised. I wanted to wait till after the race—till after I had found courage to confess to you. He broke his word. . . To-day when he put me up on Wildfire he—he suddenly lost his head."

The slow scarlet welled into Lucy's face and her eyes grew shamed, but bravely she kept facing her father.

"He—he pulled me off—he hugged me—he k-kissed me. . . . Oh, it was dreadful—shameful! . . . Then I gave him back—some—something he had given me. And I told him I—I hated him—and I told him, 'No!'"

"But you rode his hoss in the race," said Bostil.

Lucy bowed her head at that. "I—I couldn't resist!"

Bostil stroked the bright head. What a quandary for a thick-skulled old horseman! "Wal, it seems to me Slone didn't act so bad, considerin'. You'd told him you cared for him. If it wasn't for thet! . . . I remember I did much the same to your mother. She raised the devil, but I never seen as she cared any less for me."

"I'll never forgive him," Lucy cried, passionately. "I hate him. A man who breaks his word in one thing will do it in another."

Bostil sadly realized that his little girl had reached womanhood and love, and with them the sweet, bitter pangs of life. He realized also that here was a crisis when a word—an unjust or lying word from him would forever ruin any hope that might still exist for Slone. Bostil realized this acutely, but the realization was not even a temptation.

"Wal, listen. I'm bound to confess your new rider is sure swift. An', Lucy, to-day if he hadn't been as swift with a rope as he is in love—wal, your old daddy might be dead!"

She grew as white as her dress. "Oh, Dad! I *knew* something had happened," she cried, reaching for him.

Then Bostil told her how Dick Sears had menaced him—how Slone had foiled the horse-thief. He told the story bluntly, but eloquently, with all a rider's praise.

Lucy rose with hands pressed against her breast. When had Bostil seen eyes like those—dark, shining, wonderful? Ah! he remembered her mother's once—only once, as a girl.

Then Lucy kissed him and without a word fled from the room.

Bostil stared after her. "D—n me!" he swore, as he threw a boot against the wall. "I reckon I'll never let her marry Slone, but I just had to tell her what I think of him!"

CHAPTER XIV

SLONE lay wide awake under an open window, watching the stars glimmer through the rustling foliage of the cottonwoods. Somewhere a lonesome hound bayed. Very faintly came the silvery tinkle of running water.

For five days Slone had been a guest of Bostil's, and the whole five days had been torment.

On the morning of the day after the races Lucy had confronted him. Would he ever forget her eyes—her voice? "Bless you for saving my dad!" she had said. "It was brave. . . . But don't let dad fool you. Don't believe in his kindness. Above all, don't ride for him! He only wants Wildfire, and if he doesn't get him he'll hate you!"

That speech of Lucy's had made the succeeding days hard for Slone. Bostil loaded him with gifts and kindnesses, and never ceased importuning him to accept his offers. But for Lucy, Slone would have accepted. It was she who cast the first doubt of Bostil into his mind. Lucy averred that her father was splendid and good in every way except in what pertained to fast horses; there he was impossible.

The great stallion that Slone had nearly sacrificed his life to catch was like a thorn in the rider's flesh. Slone lay there in the darkness, restless, hot, rolling from side to side, or staring out at the star-studded sky—miserably unhappy all on account of that horse. Almost he hated him. What pride he had felt in Wildfire! How he had gloried in the gift of the stallion to Lucy! Then, on the morning of the race had come that unexpected, incomprehensible and wild act of which he had been guilty. Yet not to save his life, his soul, could he regret it! Was it he who had been responsible, or an unknown savage within him? He had kept his word to Lucy, when day after day he had burned with love until that fatal moment when the touch of her, as he lifted her to Wildfire's saddle, had made a madman out of him. He had swept her into his arms and held her breast to his, her face before him, and he had kissed the sweet, parting lips till he was blind.

Then he had learned what a little fury she was. Then he learned how he had fallen, what he had forfeited. In his amaze at himself, in his humility and shame, he had not been able to say a word in his own defense. She did not know yet that his act had been ungovernable and that he had not known what he was doing till too late. And she had finished with: "I'll ride Wildfire in the race—but I won't have him—and I won't have *you! No!*"

She had the steel and hardness of her father.

For Slone, the watching of that race was a blend of rapture and despair. He lived over in mind all the time between the race and this hour when he lay there sleepless and full of remorse. His mind was like a racecourse with many races; and predominating in it was that swift, strange, stinging race of his memory of Lucy Bostil's looks and actions.

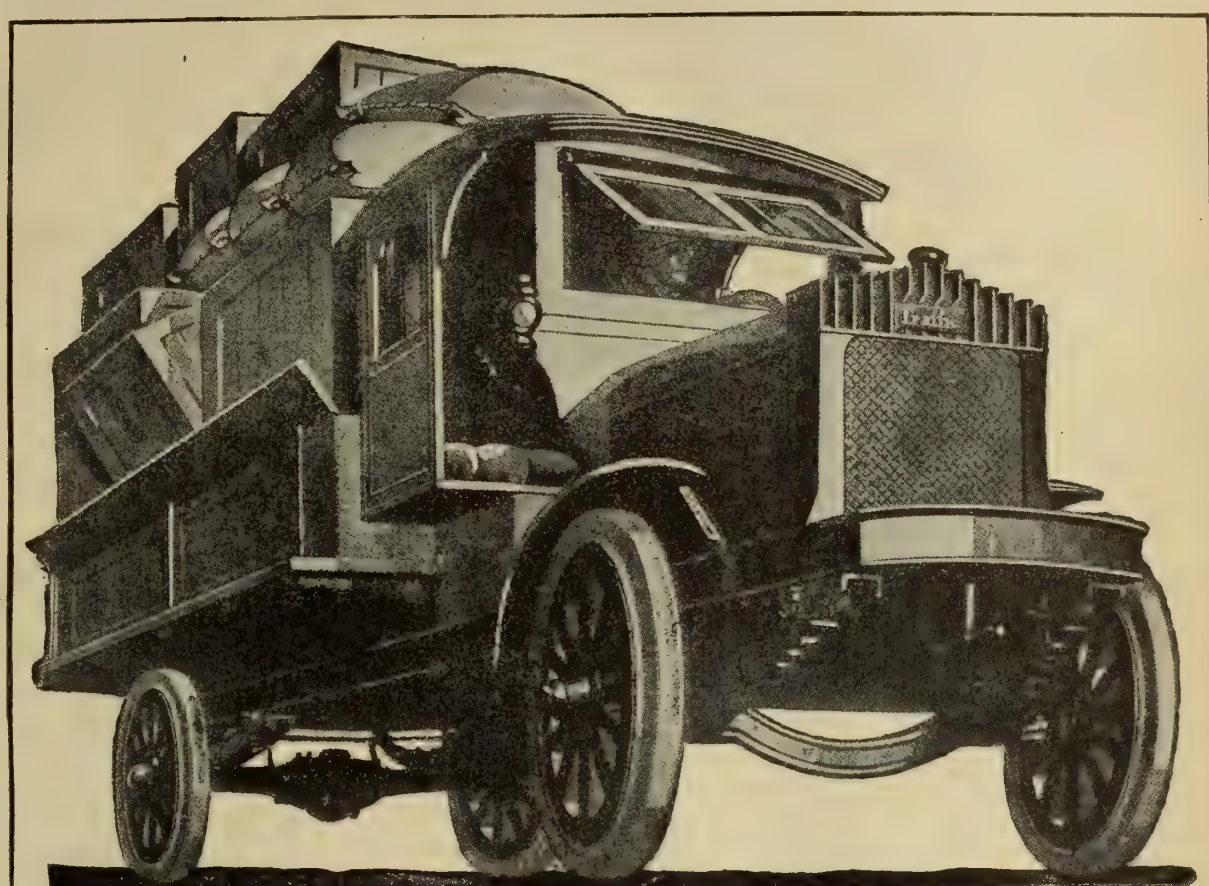
What an utter fool he was to believe she had meant those tender words when, out there under the looming monuments, she had accepted Wildfire! She had been an impulseive child. Her scorn and fury that morning of the race had left nothing for him except footless fancies. She had mistaken love of Wildfire for love of him. No, his case was hopless with Lucy, and if it had not been so Bostil would have made it hopeless. Yet there were things Slone could not fathom—the wilful, contradictory, proud and cold and unaccountably sweet looks and actions of the girl. They haunted Slone. They made him conscious he had a mind and tortured him with his development. But he had no experience with girls to compare with what was happening now. It seemed that accepted fact and remembered scorn and cold certainty were somehow at variance with hitherto unknown intuitions and instincts. Lucy avoided him, if by chance she encountered him alone. When Bostil or Aunt Jane or any one else was present Lucy was kind, pleasant, agreeable. What made her flush red at sight of him and then pale? Why did she often at table or in the big living-room softly brush against him when it seemed she could have avoided that? Many times he had felt some inconceivable drawing power, and looked up to find her eyes upon him, strange eyes full of mystery, that were suddenly averted. Was there any meaning attachable to the fact that his room was kept so tidy and neat, that every day something was added to its comfort or color, that he found fresh flowers whenever he returned, or a book, or fruit, or a dainty morsel to eat, and once a bunch of Indian paintbrush, wild flowers of the desert that Lucy knew he loved? Most of all, it was Lucy's eyes which haunted Slone—eyes that had changed, darkened, lost their audacious flash, and yet seemed all the sweeter. The glances he caught, which he fancied were stolen—and then derided his fancy—thrilled him to his heart. Thus Slone had spent waking hours by day and night, mad with love and remorse, tormented one hour by imagined grounds for hope and resigned to despair the next.

Upon the sixth morning of his stay at Bostil's Slone rose with something of his former will reasserting itself. He could not remain in Bostil's home any longer unless he accepted Bostil's offer, and this was not to be thought of. With a wrench Slone threw off the softening indecision and hurried out to find Bostil while the determination was hot.

Bostil was in the corral with Wildfire. This was the second time Slone had found him there. Wildfire appeared to regard Bostil with a much better favor than he did his master. As Slone noted this a little heat stole along his veins. That was gall to a rider.

"I like your hoss," said Bostil, with gruff frankness. But a tinge of red showed under his beard.

"Bostil, I'm sorry I can't take you up on the job," rejoiced Slone, swiftly. "It's been hard for me to decide. You've



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been good to me. I'm grateful. But it's time I was tellin' you."

"Why can't you?" demanded Bostil, straightening up with a glint in his big eyes. It was the first time he had asked Slone that.

"I can't ride for you," replied Slone, briefly.

"Anythin' to do with Lucy?" queried Bostil.

"How so?" returned Slone, conscious of more heat.

"Wal, you was sweet on her an' she wouldn't have you," replied Bostil.

Slone felt the blood swell and boil in his veins. This Bostil could say as harsh and hard things as repute gave him credit for.

"Yes, I *am* sweet on Lucy, an' she won't have me," said Slone, steadily. "I asked her to let me come to you an' tell you I wanted to marry her. But she wouldn't."

"Wal, it's just as good you didn't come, because I might. . ." Bostil broke off his speech and began again. "You don't lack nerve, Slone. What 'd you have to offer Lucy?"

"Nothin' except— But that doesn't matter," replied Slone, cut to the quick by Bostil's scorn. "I'm glad you know, an' so much for that."

Bostil turned to look at Wildfire once more, and he looked long. When he faced around again he was another man. Slone felt the powerful driving passion of this old horse-trader.

"Slone, I'll give you pick of a hundred mustangs an' a thousand dollars for Wildfire!"

So he unmasked his power in the face of a beggarly rider. Though it struck Slone like a thunderbolt, he felt amused. But he did not show that. Bostil had only one possession, among all his uncounted wealth, that could win Wildfire from his owner.

"No," said Slone, briefly.

"I'll double it," returned Bostil, just as briefly.

"No!"

"I'll—"

"Save your breath, Bostil," flashed Slone. "You don't know me. But let me tell you—you *can't buy* my horse!"

The great veins swelled and churned in Bostil's bull neck; a thick and ugly contortion worked in his face; his eyes reflected a sick rage.

Slone saw that two passions shook Bostil; one, a bitter, terrible disappointment, and the other, the passion of a man who could not brook being crossed. It appeared to Slone that the best thing he could do was to get away quickly, and to this end he led Wildfire out of the corral to the stable courtyard, and there quickly saddled him. Then he went into another corral for his other horse, Nagger, and, bringing him out, returned to find Bostil had followed as far as the court. The old man's rage apparently had passed or had been smothered.

"See here," he began, in a thick voice, "don't be a d—— fool an' ruin your chance in life. I'll—"

"Bostil, my one chance was ruined—an' you know who did it," replied Slone, as he gathered Nagger's rope and Wildfire's bridle together. "I've no hard feelin's. . . . But I can't sell you my horse. An' I can't ride for you—because—well, because it would breed trouble."

"An' what kind?" queried Bostil.

Holley and Farlane and Van, with several other riders, had come up and were standing open-mouthed. Slone gathered from their manner and expression that anything might happen with Bostil in such a mood.

"We'd be racin' the King an' Wildfire, wouldn't we?" replied Slone.

"An' supposin' we would?" returned Bostil, ominously. His huge frame vibrated with a slight start.

"Wildfire would run off with your favorite—an' you wouldn't like that," answered Slone. It was his rider's hot blood that prompted him to launch this taunt. He could not help it.

"You wild-hoss chaser," roared Bostil, "your Wildfire may be a bloody killer, but he can't beat the King in a race!"

"Excuse *me*, Bostil, but Wildfire did beat the King!"

This was only adding fuel to the fire. Slone saw Holley making signs that must have meant silence would be best. But Slone's blood was up. Bostil had rubbed him the wrong way.

"You're a liar!" declared Bostil, with a tremendous stride forward. Slone saw then how dangerous the man really was. "It was no race. Your wild hoss knocked the King off the track."

"Sage King had the lead, didn't he? Why didn't he keep it?"

Bostil was like a furious, intractable child whose favorite precious treasure had been broken; and he burst out into a torrent of incoherent speech, apparently reasons why this and that were so. Slone did not make out what Bostil meant and he did not care. When Bostil got out of breath Slone said:

"We're both wastin' talk. An' I'm not wantin' you to call me a liar twice. . . . . Put your rider up on the King an' come on, right now. I'll—"

"Slone, shut up an' chase yourself," interrupted Holley.

"You go to h—l!" returned Slone coolly.

There was a moment's silence, in which Slone took Holley's measure. The hawk-eyed old rider may have been square, but he was then thinking only of Bostil.

"What am I up against here?" demanded Slone. "Am I goin' to be shot because I'm takin' my own part? Holley, you an' the rest of your pards are all afraid of this old devil. But I'm not—an' you stay out of this."

"Wal, son, you needn't git riled," replied Holley, placatingly. "I was only tryin' to stave off talk you might be sorry for."

"Sorry for nothin'! I'm goin' to make this great horse-trader, this rich an' mighty rancher, this judge of grand horses, this *Bostil!* . . . I'm goin' to make him race the King or take water!" Then Slone turned to Bostil. That worthy evidently had been stunned by the rider who dared call him to his face. "Come on! Fetch the King! Let your own riders judge the race!"

Bostil struggled both to control himself and to speak. "Naw! I aint goin' to see thet red hoss-killer jump the King again!"

"Bah! you're afraid. You know there'd be no girl on his back. You know he can outrun the King an' that's why you want to buy him."

Slone caught his breath then. He realized suddenly, by Bostil's paling face, that perhaps he had dared too much. Yet, maybe the truth flung into this hard old rider's teeth was what he needed more than anything else. Slone divined, rather than saw, that he had done an unprecedented thing.

"I'll go now, Bostil."

Slone nodded a good-by to the riders, and, turning away, he led the two horses down the lane toward the house. It scarcely needed sight of Lucy under the cottonwoods to still his anger and rouse his regret. Lucy saw him coming, and, as usual, started to avoid meeting him, when sight of the horses, or something else, caused her to come toward him instead.

Slone halted. Both Wildfire and Nagger whinnied at sight of the girl. Lucy took one flashing glance at them, at Slone, and then she evidently guessed what was amiss.

"Lucy, I've done it now—played hob, sure," said Slone.

"What?" she cried.

"I called your dad—called him good an' hard—an' he——he—"

"Lin! Oh, don't say Dad—" Lucy's face whitened and she put a swift hand upon his arm—a touch that thrilled him. "Lin! there's blood—on your face. Don't——don't tell me Dad hit you?"

"I should say not," declared Slone, quickly lifting his hand to his face. "Must be from my cut, that blood. I barked my hand holdin' Wildfire."

"Oh! I——I was sick with—with—" Lucy faltered and broke off, and then drew back quickly, as if suddenly conscious of her actions and words.

Then Slone began to relate everything that had been said, and before he concluded his story his heart gave a wild throb at the telltale face and eyes of the girl.

"You said that to Dad!" she cried, in amaze and fear and admiration. "Oh, Dad richly deserved it! But I wish you hadn't. Oh, I wish you hadn't!"

"Why?" asked Slone.

But she did not answer that. "Where are you going?" she questioned.

"Come to think of that, I don't know," replied Slone, blankly. "I started back to fetch my things out of my room. That's as far as my muddled thoughts got."

"Your things? . . . Oh!" Suddenly she grew intensely white. The little freckles that had been so indistinct stood out markedly, and it was as if she had never had any tan. One brown hand went to her breast, the other fluttered to his arm again. "You mean to—to go away—for good?"

"Sure. What else can I do?"

"Lin! . . . Oh, there comes Dad! He mustn't see me. I must run. . . . . Lin, don't leave Bostil's Ford—don't go—*don't!*"

To be continued

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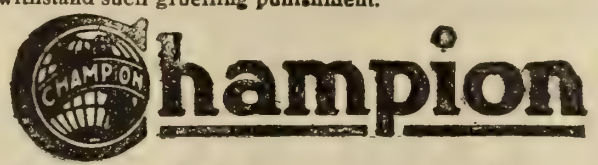

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These Black Rust Spores fly through the air and lodge on Barberry leaves where they grow and form clusters of new spores.

The Common Barberry is a spiny shrub from six to nine feet high, with yellow wood, arching branches and gray twigs. The leaves are bright green, smooth, somewhat oval, from one to three inches long, the margins with bristly teeth. The flowers are small, yellow and borne in long, drooping clusters. The berries are oblong, red and sour. The purple-leaved variety is similar except for the color of the leaves, which are purple. Unfortunately, the Barberry has been much planted in some sections of Ontario for ornamental purposes and has become wild in many localities.

The accompanying pictures give an idea of the appearance of the plant and the important part it takes in the "vicious circle" in connection with the prolongation of the Red Rust disease.

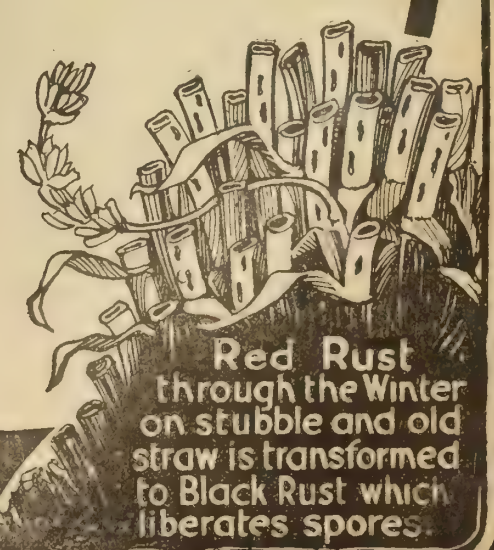
The Red Rust Stage in Young Wheat

The Ontario Department of Agriculture

Parliament Building, Toronto

HON. GEORGE S. HENRY

Minister of Agriculture



Red Rust through the Winter on stubble and old straw is transformed to Black Rust which liberates spores.

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POULTRY

Culling for Egg Production

By G. B. SNYDER

THE flock of the average farmer usually contains a number of hens that eat a large amount of feed, but do not produce many eggs. Quite naturally, the hens do not pay for themselves, and the owner is led to believe that there is no money in chickens. If he could use the proper methods of culling, he should have a flock of hens in which every hen was a 120 egg producer. This is the number of eggs necessary to pay for feed, etc., of a hen for one year.

Culling of the old flock should start in June or July, just as soon as any of the hens stop laying. Culling should continue until the flock is reduced enough to make room for the well-developed pullets in the fall. Under most conditions it is preferable to carry one-half or two-thirds of the hens over winter, rather than raise pullets to take their place. By beginning to cull in the summer, a big saving can be made in feed, and the culls will bring more if sold then than later on in the fall. Occasionally a fowl that stops laying in June or July will moult and start laying in October or November. This, however, is the exception. Nearly always the fowl that stops laying early does not begin again until after the fowl that laid late in the summer. The late layer moults quickly, while the early quitter moults slowly. If only one culling is made, it generally can be done best early in September. At that time all hens that have quit laying should be culled out.

Picking Out the Culls

The method of culling depends on the condition of the fowl and the method of housing. If the hens are tame, it is a comparatively easy matter in a small flock to pick up the non-layers. If the flock is not tame enough for this, they may be gone over at night while on the roost. In the case of large flocks that cannot be handled at night, it is best to drive the hens into catching crates by means of wire alleyways. Care must be taken not to frighten the hens.

In selecting the layers, in the first place the hen should be a fair specimen of the breed; secondly, she should possess laying indications; and thirdly, she should possess the desirable points indicative of egg laying capacity and constitutional vigor. These points are manifested by a clear face, free from wrinkles; a bold, bright eye; tight feathering, shanks short and set well apart, a well-developed croj, which across the saddle, and a deep, full abdomen. It is necessary that the keel be short and the legs stand well apart. The skin surrounding the abdomen must be soft and of fine texture to allow the necessary expansion and contraction which takes place in laying and non-laying seasons. A well-developed crop is imperative, for it is obvious that a heavy laying hen must have the feeding and digestive power to use a large amount of food in maintaining body waste and keeping up her high egg production.

In order to accommodate this large quantity of food, the intestines must be large and elastic, as compared with the period when she is not laying heavily. Careful measurements have been taken at Cornell which have shown that the intestines practically double their normal size during a period of heavy production.

At the same time that the intestines are becoming large, the ovaries and oviduct are also decidedly increasing in size and weight. As soon as a hen stops laying, a layer of fat is deposited nearly all over the body, just underneath the skin, and also a thick mass of fat is formed in the abdomen. A hen is able to form this fat only when she is not forming yolks, at a rapid rate, since they are composed very largely of fat. In fact, during seasons of heavy production a hen draws on the reserve of fat held in the body.

Of course, such a change in fat deposition could not occur without becoming manifest externally. When a hen stops laying, fat is deposited around the pelvic bones, so that they feel stiff, as compared with those of a laying fowl. The thicker the deposit around the pelvic bones, the longer it is since the fowl stopped laying.

The back of the shanks fill up with fat and become round and fine, after a hen has stopped laying for some time. The face fills out and the back part of the wattles drop down, giving the face a full, coarse, masculine appearance. All these changes in fat deposition, because they are slow, are of value in telling long periods of production and non-production. When extreme coarseness is found it is nearly a positive proof that the hen has not been laying for weeks, or perhaps months.

Fortunately, while it takes several weeks for sufficient fat to accumulate to be apparent in the yellow-skinned breeds, the yellow pigment or xanthrophyll that accompanies the fat is noticeable when only a small amount of fat is deposited or withdrawn. In such yellow-skinned varieties as Rocks, Reds, Wyandottes, Leghorns, and Brahmas, it is possible to tell, by the color of certain parts, whether the hen is laying or not. A heavy laying hen shows a lack of this yellow secretion in the vent, beak and eye-ring, while a hen that is not laying is distinctly yellow in these regions. The rate at which the yellow pigment disappears from any section, depends mainly on the rapidity or amount of the circulation through the part affected, the nature of the food supply, and the amount of fat stored in the section. Because of the circulation the skin just within the edges of the vent is the first to take on this yellow color, then the eye-ring, the ear lobes, the beak, and the shanks are affected in the order named.

The heavy breeds, because of their coarseness, carry much larger supplies of fat, and hence do not bleach out so quickly as the light breeds. This difference is especially noticeable in the shanks. The color of the skin just within the edges of the vent changes very rapidly with egg production. The color of the eye-ring, since it also is plentifully supplied with blood, changes very quickly with production. The yellow eye-ring, denoting a hen that is not laying, is very noticeable. The yellow goes out when the hen starts laying, and stays out until she has stopped laying for a few days.

The beak and the shanks fade out, because the circulation is slow, and conversely the color comes back slowly. In the beak, the color fades out at the base first, and then gradually extends to the tip. Color on returning appears first in the base and gradually extends to the tip. If the whole beak is pale, the hen has been laying for some time; if yellow, she has not laid recently.

Besides the changes in the shape of the head and shanks, due to fat deposition, there is a decided change in

the outline of the body. A hen that is laying has an enlarged abdomen, due to the enlarged intestines, ovary and oviduct. The body is deeper in the rear than at the front of the keel. This condition is reversed when a hen stops laying. The pelvic bones are well spread in the laying hen. The pelvic arch and the abdomen increase in size, depending on how heavily the hen is going to lay.

At the same time the abdomen grows larger and softer, the vent also does the same. A heavy laying hen has a full moist vent as compared with the small, puckered vent of a non-laying hen.

The same looseness that is noticeable about the vent is true of the skin all over the rest of the body. A laying hen is soft and flabby, and the bones are readily felt. A non-laying hen is hard and plump and the bones are not evident.

The secondary sexual characters, ear lobes, comb and wattles, respond directly with the primary sexual character, the ovary. When a fowl is in heavy laying condition, the ear lobes are large and full. As production decreases the ear lobes contract.

With large combed breeds, such as the Minorcas, Leghorns and Campines, the comb is a remarkable indicator of the laying condition of the fowl. Of course, the same differences are true of the smaller combed breeds, but are much more difficult to see. The comb expands or contracts according to the condition of the ovary. If the hen is prepared to lay very heavily the following week, the comb is very full, smooth, stiff and shiny.

It is so enlarged that it feels waxy. As the ovary decreases, the comb looses its stiffness and becomes soft and pliable. Little excrescences begin to stand out, and the comb feels a little rough to the touch. When the comb is rough, it will mean that the hen will only lay lightly the following week. If the comb shrinks until it is hard and dry, and is covered with yellowish white scales, or dandruff, the ovary is dormant. When the hen begins to lay, for instance, after being broody, the comb enlarges, breaking up the white scabs that have formed, and bright, glossy areas can be seen through the white patches. While the comb is enlarging, it feels warm, probably due to increased blood supply. At all other times, the comb is comparatively cold.

While depending largely on color and body changes, one should never lose sight of the differences in action of the layers and non-layers. A laying hen is wide awake and active. She is continually scratching and digging. She does not hang around the edge of the flock at feeding time. She wants to be friendly, and by her continual singing asks to be saved and appreciated.

WINTER EGGS FROM REDS

By A. E. Crowther

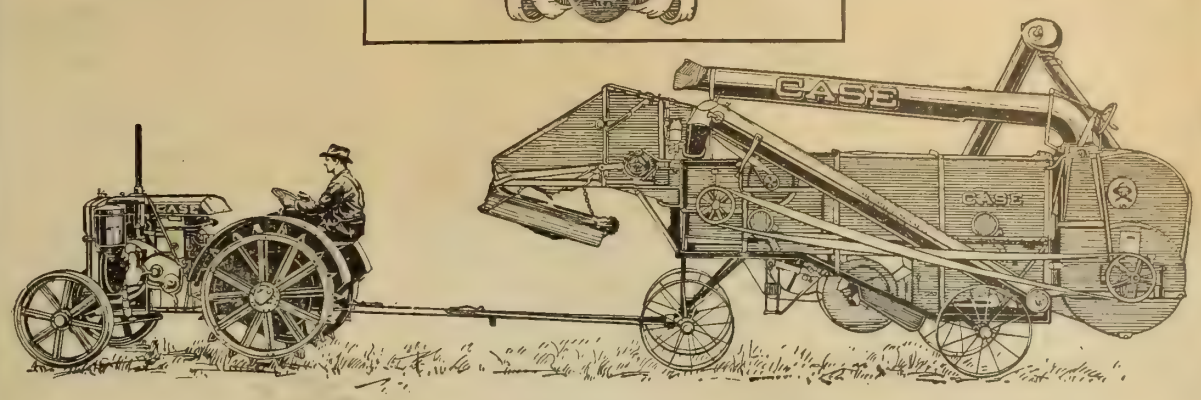
MOST people acquire a taste for eggs during the cold winter months, when eggs are scarce and at a very high price. Any farmer can easily earn a considerable sum by devoting part of his time to the production of winter eggs. The only complex thing about it is its simplicity, and one's efforts in this direction will be well rewarded.

Four years of experimenting with different breeds of fowl has shown that Rhode Island Reds are the ideal fowl for winter laying. The fact that seven hens in the coldest months of January and February laid over 1,000 eggs is enough to open our eyes to the great possibilities there are for us.

In order to get winter eggs it is necessary to hatch the chickens as early as possible in order that they may moult early, thus being in good condition before the cold weather arrives. A warm hen house is, of course, essential. The ventilation must be good in order that the hens may be kept in good health. The light should come from low windows on the south side.

Continued on page 33

CASE



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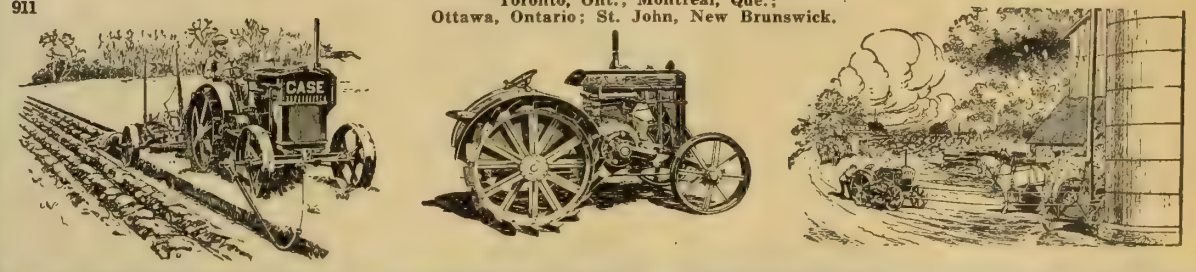

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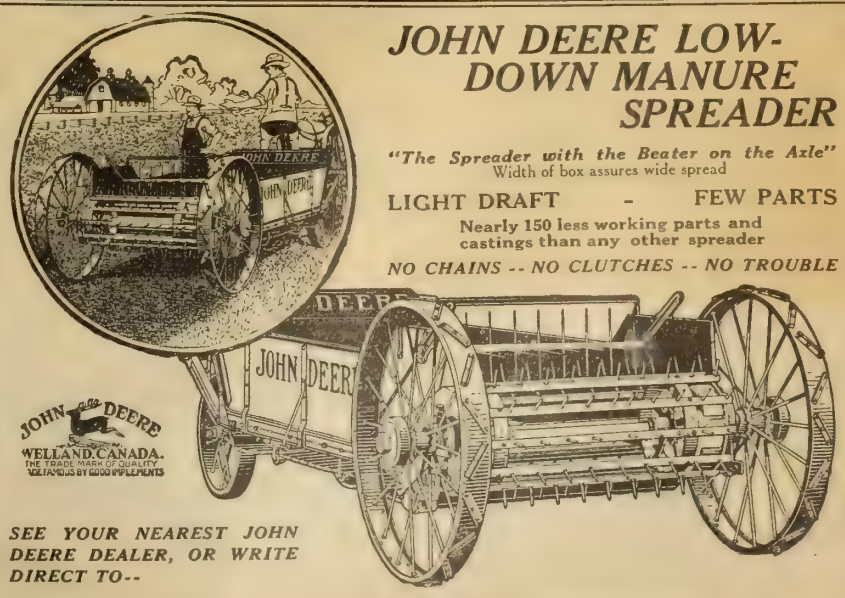

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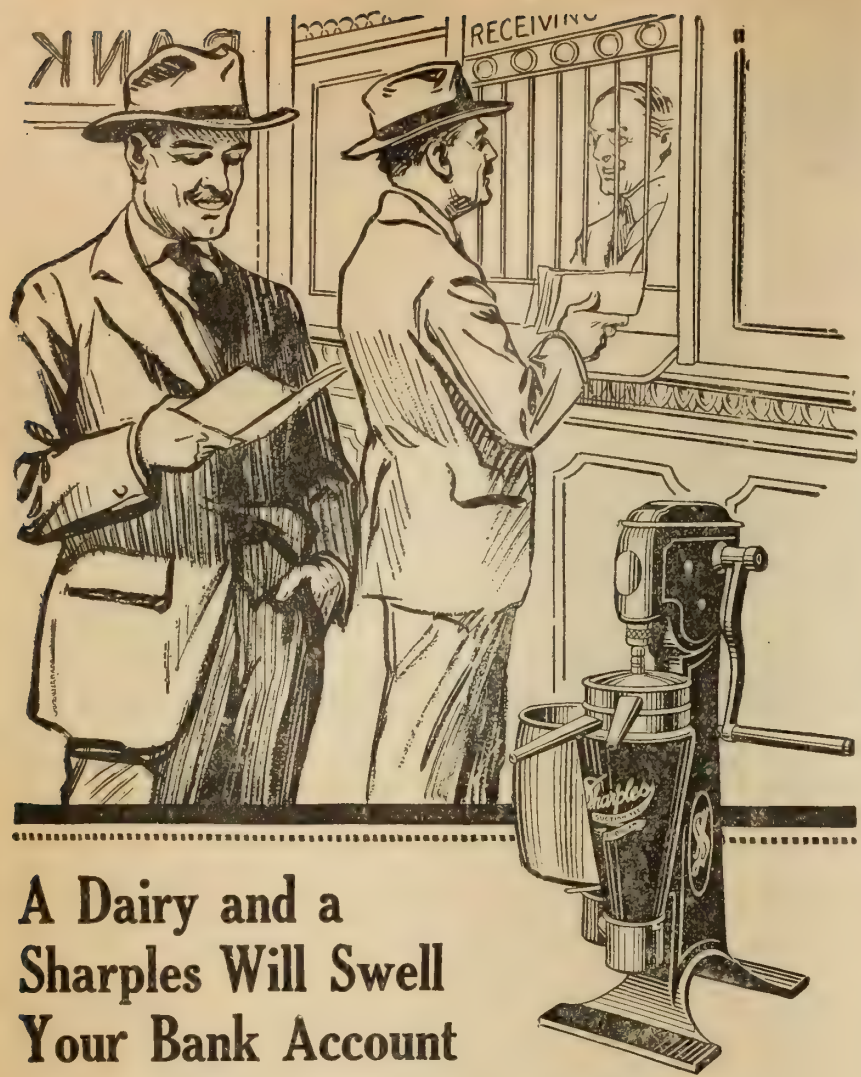

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DAIRYING

RAPE IS VALUABLE PASTURE

By George B. Hood

LAST year the animal husbandry department of the Iowa Agricultural Experiment Station pastured young growing hogs on rape. By so doing each acre of rape was found to save 366 pounds of corn and 881 pounds of meat meal tankage. With corn at $1.50 a bushel and tankage at $1.00 a ton, an acre of rape replaced $53.86 worth of these very costly feeds.

Some interesting figures on the relative value of rape and alfalfa as a supplementary hog feed are also available from Iowa. Pigs weighing 50 pounds were fed respectively on alfalfa and rape pasture. They were also given free access to shelled corn, meat meal tankage and rock salt, in separate feeders. It required 121 days for the hogs on alfalfa pasture to mature to 225 pounds' weight, and 122 days for the pigs on rape to attain the same weight. Where the pigs were carried over the summer on three-fourths corn ration and then fed full feed after the pasture season had closed, rape gave better and quicker results than alfalfa.

The feed requirements for 100 pounds of gain on alfalfa was 342.7 pounds of shelled corn, and 31.7 pounds of tankage, a total of 374.4 pounds; on rape it was found that 9 pounds less tankage was required, 342.5 pounds of corn and 22.4 pounds of tankage being necessary. This clearly shows that rape is high in protein content and therefore extremely valuable in the production of bacon. Rape is better adapted to young growing hogs than dry brood sows as they require more protein in their feed, although the latter do well on it.

Rape is an excellent pasture for sheep, especially for fattening lambs in the fall. Lambs gain more rapidly, and much more cheaply on grain and rape than when fed a heavier ration of grain alone. It is also a superior feed for flushing ewes, prior to the breeding season. It tones them up, with the result that fewer breeding services are required and a larger average number of lambs per ewe are likely to result.

Not only is rape a very good forage crop, but it is extremely valuable in smothering weeds. By sowing in drills 28 inches apart, at the rate of one and a half pounds per acre, and cultivating as long as growth will permit, such weeds as twitch-grass, bind-weed and perennial sow-thistle can be coped with. The writer has seen it sown in all sorts of locations and at all dates up to late summer, on newly stumped lands, in orchards, and, while the yields naturally varied with the class of land on which it was sown, yet it always gave good results, considering these conditions. By all means, if a farmer has a few idle acres, a patch below the barnyard, or some other odd vacant corner, he should sow rape. He will find it very handy, indeed, in which to turn the pigs, calves or sheep, and if large enough in extent, the young cattle.

WEEDING OUT THE BOARDERS

THE progressive dairy farmer never leaves anything to guesswork. The use of a reliable scaler will prove conclusively to him which animals are worthy of a place in his herd, also which ones he should turn over to the sausage maker and tanner.

Many a hard-working man uses up a great deal of energy trying to produce milk from animals that are entirely unfitted for milk production.

The weighing and testing of milk, by the farmer, will place his business on a paying basis, upon which any farmer can successfully operate his establishment.

Agriculture is without doubt the major industry of Canada. Hence, every farmer must see to it that he is conducting his farming operations at a profit.

Unbusinesslike methods have no place on the Canadian farm.

SELECTING THE DAIRY SIRE

By C. F. M.

GREAT care should be taken in selecting a herd sire for a herd that is already highly developed. Only those animals that have been proven should be used. Bulls whose daughters have made records in official tests are the only ones that the owner of an established herd should buy. A practice that is too commonly followed is that of buying a bull and using him for a couple of years and then disposing of him.

This makes it impossible to judge the bull justly, because you have no way of knowing what his offspring will produce.

In the case of community breeding, this could be overcome to a great extent. Bulls would be exchanged between clubs and then kept within reach until their breeding value was ascertained.

In looking over the history of the early improvers, we find that bulls were usually judged, not only according to their pedigree, but mainly according to the kind of offspring which they produced. This we believe was to a great extent the secret of their success.

Buyers of pure-bred stock find that they are almost compelled to become connoisseurs of pedigrees. This may appear rather strange at first thought, but let any one pick up a sale catalogue of pure-bred stock and he will find reason in the statement. Footnotes are so cleverly written that, to the eye of the amateur, the animal in question has wonderful records. Whereas on closer examination he will find that the notes refer to some remote ancestor.

THE ANNUAL PASTURE

FARMERS who took the precaution to sow a few acres of annual pasture will not need to fear the time when pastures begin to dry up.

The old-time shrinking of checks, during the real hot weather, has been overcome to a great extent by far-sighted farmers who plan wisely for all contingencies.

The pasture mixture which is highly recommended at the Ontario Agricultural College is composed of 1 bushel of barley, 1 bushel of wheat, 1 bushel of oats and 7 pounds of red clover per acre.

Cows should not be allowed to trample over the field after they have eaten their fill. A good plan is to allow them to feed for two or three hours at a time and then close them out. This eliminates unnecessary waste and keeps the pasture fresh.

A few acres of animal pasture may mean the difference between operating a farm on a profit or loss basis.

THE MON OR THE KYE

THE following bit of verse appeared in the London *Butterman.* The enthusiastic report of the farmer on what his cows are doing on good grass brings the question from the editor as to whether it is the cows or the man that makes the gold:

Dear "Butterman," we're into June—
The langest day is here, man;
My starter's in the best o' tune,
And butter's very dear, man.

The kye are out baith night and day,
And oh, they're braw and sleek, man;
They're doing weel, I'm sure you'll say,
At thirteen pund a week, man.

We're makin' rich, and laying by;
We've found the missing link, man—
There's naething pays like keepin' kye.
Just tell me what you think, man,
O' this wee bit;
And if you've time reply in rhyme.
—*ELVANFIT.*

EDITOR'S REPLY

If your tale is strictly true
I'll tak' some grass and buy a coo;
But tell me whaur you're living noo
Till I behold.
Perhaps it's no the kye, but you
That mak's the gold.

BETTER BREEDING REQUIRED

THE O. A. C. REVIEW

FARM surveys show us, first that success in farming depends more upon good livestock than on good crops, secondly that on most farms the grade of stock kept is poor. This means that until the majority of farmers increase the quality of their livestock, agricultural conditions are not to improve materially. Since the average farmer is slow to take advice, it will be a long time before agricultural conditions will be bettered—unless advice is hurled at him in such a vigorous manner that he is forced to awaken.

Heavy guns, concentrated on one point, resulted in great advances during the war. Big advertising schemes achieve great things in the manufacturing world. The campaign for greater hog production and later for greater crops were very successful. At the present time a campaign for increased stock-breeding is being waged. With this there could be sandwiched a propaganda for a better quality of stock.

Statistics prove that well-bred stock soon repay the extra cost incurred in making the start. The department of agriculture has proved this and has spread the knowledge among farmers, but they are slow to heed. Perhaps a louder, more concerted, incessant dinning of the fact into their ears might help, as it has done before. Therefore, let all interested in scientific agriculture arm themselves with facts about the matter and attempt to drive a wedge into the ranks of unprogressive farmer-breeders.

STERILIZE AND COOL THE MILK

THE present day demands for high quality dairy products makes it essential for all those who produce milk to exercise great care in handling it.

Milk seems to become tainted easier than almost any other farm product. Therefore extreme care should be taken to see that all milking utensils are thoroughly sterilized each time they are used.

Many people merely rinse the milking pails with lukewarm water. This method is not at all commendable. Nothing but a thorough sterilization is sufficient.

When milk is drawn from the cow, if you are handling whole milk, it should be cooled immediately, in order to check the bacterial action which commences if milk is left at body temperature. On the other hand if milk is to be separated, the cream should be cooled immediately after separating.

In experiments carried on, at the Bacteriological Department, Guelph, it was found that dust, straws, hair, flies and manure all caused a bacterial action that was very undesirable. Hence, we can readily see that everything in connection with milking, operations must be kept spotlessly clean.

Feeding and cleaning should be done some time before milking. Cows should be groomed daily, being particular to see that the udders are kept clipped free of all long hair. Wiping the udder with a damp cloth before milking will lessen the danger of having dust, hairs, or straw or any other foreign matter in the milk.

The attendants should have clean clothing and clean hands when milking. Washing the hands after milking each cow not only keeps the milk clean but it lessens the chances of spreading any infectious disease that may be present.

The use of pails having about two-thirds of the top covered has been found a great help in keeping the milk clean.

In any case, after observing all the most rigid rules in cleanliness, don't forget to sterilize all utensils, including the separator, twice daily. In addition to this cool the milk or cream as soon as possible after milking.

If these precautions are taken, there is no question but that a great saving would result, because there has been a great waste in past summers, owing to unsanitary methods used by the milk producers.

HANDLING THE BULL

THE bull should have a ring in his nose when he is a year old, and, if headstrong, earlier. As soon as the wound is healed he should be taught to lead by it and always be handled by a staff. Daily grooming will improve the bull's looks and do him good. Never fool or play with a young bull. Teach him to mind, and as he grows older never allow him a chance to know that he can do anything else. It is a mistake to trust him if he is gentle. We find that in many cases the gentle bull is the one that kills the man.

One of the important items of a bull's care is to look after his feet. Keep t hoofs well trimmed. It may be necessary to throw the bull in order to saw off his hoofs. Let the bull nave plenty of sunlight during the winter; a good sun bath is essential to the health of the animal. See that he gets plenty of exercise. One of the best ways to exercise is in a tread power, where he can be employed to run the separator or other light machinery on the farm. The bull should never be kept in a dark pen. His quarters should be in a light, airy box stall, where he can be fed regularly, and where he is in sight of the herd of cows.

WINTER EGGS FROM REDS

Continued from page 31

They must be kept clean. The bedding should be changed frequently that the hens may be encouraged to scratch. This is essential to the exercising of their bodies. Good food and regular feeding are also important factors in egg production.

A great deal depends on the feeding of the hens during the winter months. It has been found that a mash on cold days adds greatly to the egg production. Meat scraps and scraps from the table are also beneficial. If possible, sprout oats and feed them to the hens about once a week. This green food aids the fowls' digestion and keeps the body healthy. The necessary grit should be kept in boxes for the purpose. An absolute essential to egg production is plenty of good, clean water. The hens should be fed regularly, and care taken to avoid overfeeding. It does not pay to make your poultry a sink, into which you can pour all your poor grain.

If possible, for the sake of getting results, the hens should be leg-banded and records kept. In this way you can tell the efficiency of your flock, and will have an exact record of each hen, and can kill off any that do not reach the standard you set up.

The eggs laid by these birds are large and of a rich brown color. In weight they are far heavier than those of any other breed. And when eggs are sixty and seventy cents a dozen it is well worth the trouble to get eggs of this kind.

If the above directions are carefully followed, failure is impossible, and the farmer can make his flock of hens one of the most paying things on the farm, if he will but take the time and trouble necessary.

The egg record for hens Nos. 26, 27, 31, 32, 33, and 34, showed for November a total of 105 eggs laid.

Makes Milking a Pleasure

NEARLY every dairyman hates milking. He hates to sit beside a warm cow in hot summer weather, perspiring to beat the dickens and the cow's tail continually switching his face. It's no fun—it's drudgery.

And then, too, it takes so much time—time that should be spent in the fields, especially now when labor is so scarce. And yet, the task of milking can be made the easiest, most enjoyable job on the place with an Empire—the recognized standard among milking machines.

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Furthermore, the Empire Super-Simple Pistonless Pulsator, used on all Empire Milking Machines, causes such regular and uniform action in teat cups that its soothing and calming effect on the cow usually results in a very appreciable increase in milk flow.

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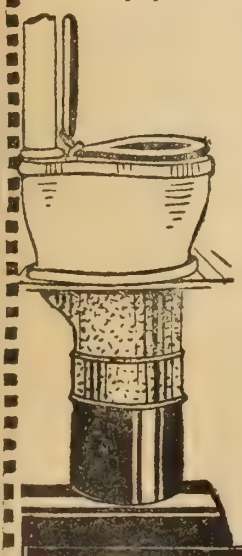

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The Western Sheep Rancher's Losses

By WILL C. BARNES

From the "American Sheepbreeder."

THE blazing pine log in the huge fireplace threw out a grateful glow and its streamers of flame lit up the rough interior of the forest ranger's cabin high up the Cascades of the Northwest. Suddenly the quiet was broken by a long mournful howl that echoed through the canon in which the cabin stood in a way that fairly gave one the "creeps." The ranger strode to the door, opened it and listened. The tinkle of half a dozen sheep bells floated up through the clear night air and a moment later came the sharp crack of a rifle followed by a stillness one could almost feel.

The ranger closed the cabin door and resumed his seat by the fire. He was one of that type of old-young men of the West, whose ruddy cheeks, and almost white hair together with his quick active movements made his age a matter of guess work. He had spent fifteen years in the forest service and, from the peaks of the Sangrede Christo in southern Colorado, to the snowy Cascades at the head of Lake Chelan in Washington, knew the mountains as an open book.

Short on professional education but long on good sound horse sense, knowing little of the theoretical but much of the practical side of forestry, a stockman, lumber jack and miner, a nature lover to the last fibre of his frame and brim full of enthusiasm over his work, he represented a fast disappearing type of forest ranger who in the early days of the forestry movement in the West so loyally supported Gifford Pinchot in his fight for the forests and gave to the movement much of its force and impetus without which it would never have made the progress it had.

"I told the sheep herder not to camp down in the canon down below here," was his remark as he sat down, "for there's been a wolf hanging around here for several days."

"Suppose he killed the wolf when he shot?" was my natural inquiry.

"No, he didn't shoot at the wolf; just fired a shot to stop the sheep from running any further. Didn't you hear the rattle of their bells when I first opened the door?" he asked. I had.

"Well," he continued, "the wolf undoubtedly scared the sheep all bedded down nice and quiet and away they went, helter skelter, over the logs and rocks, breaking legs and killing lambs. They'd been running yet if he hadn't fired the shot to stop 'em."

"How would firing a shot stop them from running?" I said in my innocence as to the ways of sheep. "I'd suppose a shot would make them run faster."

"Not sheep," he explained. "Sheep mostly have one track minds, as the President once said of some men. The wolf started them off the bed ground but the shot put a new idea into their thick skulls and they stopped to study about what it might mean.

"The instant they stopped running they forgot what they was running for and immediately settle down and go off to sleep as if nothing had happened to disturb 'em. Funny things is sheep," he went on, "but sheepherders! Man, that's a sight funnier. Mostly they hates to take a ranger's word for anything. Now this feller down here for instance. I reckon if I hadn't told him not to camp down in the canon where its rough and no decent bed ground, he'd have gone on across the creek and out onto the other side where it's fairly level, and if the sheep didn't get to running they couldn't hurt theirselves. But, no sir-ee! 'What's a forest ranger know about sheep anyhow,' he ses to himself. Rough or no rough, wolves or no wolves, my little talk about campin' places settled the matter and there he is now with maybe half a dozen lambs killed and a ewe or two with broken legs, all on account of their rompin' and racin' about in that rough place where they were bedded down."

He knocked the ashes from his pipe into the fireplace. "Some sheep herders is sure curus critters, and sheep owners stand to lose or make accordin' as their herders fits into their jobs.

"Merely cause lambs are worth more than ten dollars a head delivered at the shipping pens, and wool this year is bringing from 60 to 70 cents a pound just as it came from the sheep's back, is no sign that every dollar the sheepman takes in is velvet. Believe me, there's drawbacks and discouragements in the range sheep business that would make an eastern farmer think the whole world was dead set against him. When things go right sheepmen make heaps of money, but when they don't! Man, dear, their profits fade away like a snowball in hell.

"Two years ago," he continued, "I worked on the Kootenai Forest away up in the northwestern Montana close to the Canadian line. It was a dandy sheep country but a rough region to get sheep into. Only way was to ship them in on the railroad, unload 'em at a little spur and then drive 'em to the ranges.

"Two sheepmen from the Palouse country in eastern Washington was mighty keen to get a mountain range, they having always used the open plains country down in the Big Bend region of the Columbia River. The supervisor sent me on ahead to look the ground over and see if there was any death camas on the range, especially near the unloading place, that plant being sure death to sheep, especially when hungry.

"Now you know a forest ranger, he's expected to know all about poison weeds and when he finds a place where there's lots of it, he generally posts it with 'poison warnings' so sheep herders can keep their bands away from it, for oddly enough such plants generally grow in certain areas of not very great extent, and if a herder knows where the bunches are he can handle his herd so as to keep the animals away from the worst of it.

"Moreover, sheep won't eat such plants unless they are mighty hungry. People used to think animals had some kind of a sixth sense which made them let poisonous plants alone but there's nothing to it. They may have a sixth sense all right but it doesn't keep cows and sheep from feeding on poisonous weeds just the same as any other feed if they are hungry and can't find better forage. I don't believe either sight or smell has the least thing to do with it. It isn't because they have some way of knowing the plant will poison them but just because the taste doesn't appeal to them and as long as they can find something that has a taste that does appeal to them they let the poison alone. But hungry they will eat anything so long as it's filling. One of the first things a forest ranger is taught is that hungry sheep must be kept away from the ranges where certain poisonous plants are known to exist until they have filled up and then they can be taken over a range full of such plants without much danger of loss.

"Well, I gets to this Kootenai range the day before the sheep are due to arrive by train, sets up my little tent, hobbles out my horse and pack mule and after catching a mess of trout from the creek and cooking them for dinner, sets out to look for poison weeds.

"Up there about the only thing to be

afraid of is death camas, a little plant with fine leaves so like grass that it's hard to locate until in flower. Some people call it 'wild onion' and it's mighty rough on sheep, especially when they're hungry. It was a dandy sheep range, plenty of water, shade and feed, especially weeds which sheep love better than grass. Since the mountains were born never a sheep or a cow made a track in it.

"I soon found several large patches of camas right close to the unloading pens, enough to kill every sheep in the shipment if not kept away from it. Mostly, however, it was so close to the track that by rushing the sheep through it without giving them time to graze there was little danger of losing any. A mile back from the track the range was higher and I couldn't find enough of the stuff to worry about.

"The train pulled into the spur about one o'clock the next day and I hunted up the camp tender who was in charge of the outfit and told him what I was there for, and how the range was fixed for feed and poison. The pens would hold about 500 head or two cars and I advised him to unload that many and then take all hands and hustle 'em out across the dangerous places to a point about a mile away where there was fine feed and but little signs of camas.

"He was one of them 'know-it-all' sort, kind of had an idea that what a forest ranger didn't know about sheep herding would fill a big book. I seen right off he wasn't liable to follow my advice and, sure enough, he had the cars spotted and unloaded those sheep deck after deck, opened the gate to the pens and let 'em chase right out as fast as they came down the running board. They had been about sixteen hours on the road, were hungry and thirsty and the way they waded into that fresh feed was a sight. I wanted to play safe, so I chased off down to the caboose where the camp tender was unloading their camp plunder. 'Remember, friend,' I remarks, 'I give you fair warning about this range close to the pens being lousy with camas. If there's any losses I've done my part all right.'

"'Surest thing you ever know you did,' ses he, 'and I'll take the responsibility of handling these sheep as I feels like, me being paid good, hard coin to look after 'em. Moreover,' he continues, as he slammed a pack saddle onto a fine looking pack mule, 'I been handlin' sheep in these parts for a right smart time, and I aint never yit called on nary forest ranger for advice.' Just like that he said it.

"Me, I jis nachelly followed my nose back to where my tent was and got up in the middle of my horse staked near by, and rode off to have a look-see at the route over which I'd have to take the sheep, the second herd being due to arrive in a day or two.

"I gits back at dark and finds the sheep all bedded down quiet and nice and the herder cooking supper.

"'Welcome, little stranger,' says the camp tender, sort of perky like. 'Welcome to our city. Set in an' eat a bite with us, it's all on the old man.'

"If there's anything better tasting than fresh lamb after a long ride, I don't know what it is, and I sure did my best to save the cook the trouble of having any left over.

"Nobody says a word about poison weeds, only the tender remarking how full and contented the sheep all looked after their ride on the cars. After supper I walked out to the bed ground and takes a look at the band. They was about eighteen hundred ewes and fifteen hundred lambs, and they surely did look as full as ticks. I was watching for certain signs, however, and didn't have far to go to find 'em, for here and there in the bunch was a sheep acting uneasy and restless. Some of them were slobbering and frothing at the mouth and breathing sort of hard and rapid like as if they'd been chased by a fool dog or a wolf.

"Now, I'd seen sheep killed by camas over in Idaho and I knew the symptoms mighty well, and when I rolled into my little old 'wind bed, in my tent, I felt sure there'd be some dead sheep on that bed ground the next morning.

"Sheep herders is powerful early risers, but the sheep beat 'em to it and got off the bed ground before it was even gray in the east, they waking me next morning with the clatter of their bells. When I pushed out the flaps of my tent and looked towards the bed ground, I first thought part of the band was still asleep for it looked as if half of 'em were lying there. They was there all right, but on their sides deader than Julius Cæsar.

"They wasn't much conversation at breakfast, believe me, and I not being inclined to rub it in much, didn't mention sheep. Besides, that camp tender looked mighty like a man that wouldn't stand much kidding too early in the morning.

"It took him and the herders two or three days to strip the pelts off of more than 700 grown sheep that laid 'em down that night. After that was over, Mister Camptender goes off down the railroad about fifteen miles to where there's a little lumber camp and sawmill and gets fuller than a boiled owl and stays there a week, leaving the herders alone on a strange range.

"I showed the herder where his range lay and pointed out to him the places where camas was bad and then packed up and pulled out for my station, from where I phoned the owner of the sheep and advised him to get out to his camp and look after things.

"Last summer, when we had a big fire here, the district forester sent a lot of men from other forests to help us out. One of them came from the Colville forest in Washington, and the fire lines happened to run across that old bed ground, where he noticed the piles of white sheep bones. 'Looks like somebody had a lot of poisoned sheep to skin hereabouts,' he remarked, nodding at the bones.

"'Sure did,' says I.

"'Camas?' says he.

"'Zygadenus venonosis did it,' says I, rattling off them Latin names like I was fed up on such words all the time. Then I told him how it happened. He laughed.

"'Seems like sheep herders would finally learn that we're trying our best to help 'em out,' he said, 'but they don't reckin a Government man can tell 'em anything about handling sheep. Had exactly the same thing happen over on my forest, couple of years ago.

"'We had a lot of range just like this, couldn't use it unless the sheep were shipped in. 'Twas all new unused range and the supervisor sent me on ahead to spy out and locate any dangerous places. I spent a whole week rambling about over the range and found plenty of camas, especially close to the railroad unloading pens. Plastered every place where it was with "poison posters," and when the sheep arrived, I told the camp tender just as you did, not to let 'em graze near the track, but to push 'em out as fast as they could waddle along.

"'This feller was like your man, knowed it all and then some. He just lately came from down in Arizony where they didn't have camas, and though I showed him plenty of the stuff, he wouldn't take my word for it; says the sheep were hungry and best way was to let 'em fill up slowly. If we gets to chousing 'em about, he reckoned they'd sure die on us.

"'He was a contrary cuss and had his own way. Next morning there was more than twelve hundred dead sheep —mostly ewes—lying stiff and stark on the bed ground, and a whole lot more mighty sick. None of them was sicker, however, than that camp tender, and when he saw the fool break he'd made, he just flagged the first train that came along and climbed aboard. "Good-bye fellers," says he, "I'm pullin' my freight for good old Arizony, where mebbe there ain't so much feed, but what there is, can be e't by respectable sheep critters without its killin' 'em all."

"'I reckon he hit the trail straight through to his old stomping grounds, for the boss never seen hide or hair of him, and the first he knowed about his losses was a wire I sent the supervisor telling of the trouble. Them sheep was worth $18 a head, which figgered out a loss of twenty thousand dollars at the least, for the man what owned 'em.'"

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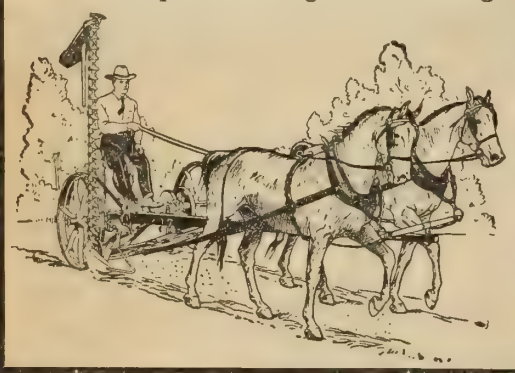

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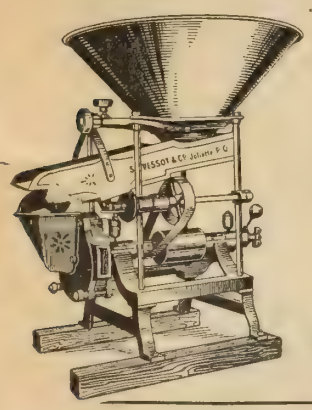

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"In 1918, I rode for several days with a ranger on a National forest in Montana. One afternoon we crossed a little glade in the timber that was dotted with white objects which attracted my attention.

"'What are they?' I asked, nodding my head at the white spots.

"'That's what a bull-headed sheep herder cost his boss about two years ago,' he replied, reining his horse toward them.

"As we drew nearer I saw that the spots were nothing less than the whitened bones of dead sheep.

"'How did it happen?' I queried.

"'Same old story,' said he, 'a know-it-all sheepherder who wouldn't take the word of a young ranger who met up with him on his way to get help to fight a fire burning just across the range from here. The kid runs across the herder and advised him to get a move on and work his sheep out of here, because from all he could see the fire was bound to run over the ridge onto this side before many hours, there not being men enough to do much towards stopping it.

"'There was a big open burn about three miles from there, where the kid advised the herder to work the sheep, for they'd be safe in it. It was about mid-afternoon, and the herder he allowed he wasn't going to move camp that night.

"'Plenty of time to git out tomorrow morning,' says he.

"'I done told you,' says the kid, 'so don't blame me if you gets into trouble.'

"'Don't give yourself no uneasiness, sonny,' says the herder, 'I was up here in these here mountains herding sheep when your ma was changin' didies on you, an' I reckon I'll be able to handle this bunch to the satisfaction of the man what owns 'em.'

"'That night the wind changed and about midnight he found himself choking with the smoke that rolled in about his camp like a pall. The sheep was already driftin' before the wind and he waited 'till daylight to find his hobbled horses and pack mules, but they had drifted yonderly with the sheep, and after making up a little pack of grub, he struck out on foot in the direction of where he thought he'd find the sheep, which he finally did, but badly scattered.

"'Bimeby e's lost for fair, the smoke being so thick in the timber that he lost his bearings completely. Finally he runs into the fire line right ahead of the sheep, and it looked to him as if he was about to be surrounded by fire. So he quits the sheep and struck out the way he believed the old burn lay, hoping he would find it and his bearings. In half an hour he came out of the timber into the burn, and after leaving his pack of grub in a safe place, he struck back into the smoke, looking for the sheep. But he couldn't locate 'em and had to give up and get back to the burn for his own safety.

"'The fire ran up to the burn and stopped. The next morning he went along the edge of the burn looking for signs of the sheep, hoping they had in some way worked their way out of the fire and into the open. About two miles from where he laid out, he struck about half the band grazing peacefully enough in the old burn. He scouted around for quite a while, thinking the rest of the band was there somewhere, but finally gave it up and went back into the still smoking timber and found dead sheep scattered all the way to where he quit them. It wasn't over half a mile, and if he had not lost his head and left the sheep to rustle for themselves, he might have saved every last one of them. As it was, he counted over a thousand dead sheep—some burned almost up, others simply singed and eventually smothered by the smoke.

"'You know,' the ranger continued, 'the Mexicans have a saying that the sheep is golden hoofed, and even in death the old ewe leaves her pelt to pay the funeral expenses.

"'Well, there wasn't any such good luck for the owner of those thousand burned sheep, for the herder having lost his camp outfit, didn't have time to stop to skin those that were not badly burned, but left them just where they lay.'"

Occasionally there's some unusual loss that cuts deep into the sheepman's profits. Such was the death of over five hundred head of grown sheep that were killed by a single stroke of lightning in the summer of 1918 in the Wasatch National forest in Utah. The sheep, numbering about 1,200 head, were bedded down for the night some two or three hundred feet from the herders' tent. A heavy storm broke over the mountains and with it came a terrific flash of lightning, which struck at one side of the close-lying sheep, cut a single swath in them about to the middle, then split or forked, leaving a trail of dead sheep in its wake in the shape of a huge letter Y, on both sides of which the animals were untouched.

The herders, sleeping soundly and unharmed in their tent, knew nothing of the matter until daylight. The loss to the owner was over ten thousand dollars. Of course, there is no insurance possible against such losses.

Another fruitful source of losses to the range sheepman is through "pile ups," either in corrals or on the ranges.

A few years ago in the Sawtooth Mountains of Idaho, a herder had his band nicely located on a fairly smooth hillside, at the lower end of which was a deep arroyo, or what Californians would call a gulch. This arroyo was about a thousand feet long, perhaps five or six feet deep and as many wide, with almost perpendicular sides. The herder was comfortably seated under the shade of a small pine where he could overlook his charges, when his dog gave a short growl and disappeared into the underbrush toward a ledge of rock that stood out of the hillside above the grazing sheep.

At that instant a huge silver tip strolled lazily out onto the ledge as if to take stock of the sheep and the prospects for a good meal of mutton.

Instantly every animal in the bunch of 1,800 was tearing down that hillside nor stopped to "watch their step," with the result that they drove headlong into that arroyo, piling up one on top of the other, until it was filled to the top with dead and dying sheep, the most of them being smothered by those on top.

Again, in the winter when the sheep bands are out on the desert ranges, such as those of the Red Desert region in western Wyoming, or the Great Salt Lake Desert of central Utah, a sudden blizzard will break over the ranges before which the herds of sheep drift like feathers in a gale, in spite of the herder's attempts to hold them up or guide them to a place of safety and shelter.

Perhaps they huddle under the lee of a low ledge of rocks or make their way down some deep wash or arroyo, whose high banks offer some protection from the fierce wind. Here they gather as close to each other as they can stand, and meanwhile the snow driven by the wind drifts into the wash, slowly filling it, and by morning the whole band is covered deep in a white mantle. Unless the herder is right there to dig them out and get air into them, they will smother. Frequently whole bands have been lost in this way, the herder having been forced to leave the sheep to save himself or got separated from them in the dark, and was unable to again find them, buried as they were beneath a drift of snow perhaps ten feet deep. There are many other ways in which the sheepman's annual receipts are sadly depleted, such as "cuts" of small numbers of sheep which, becoming separated from the main band, fail to find them again and easily fall a prey to coyotes, wolves and other predatory animals that hang about the herds all the year long. In the early spring days many a little wabbly-legged lamb falls helplessly into some of the huge badger holes that infest many ranges, while his foolish old mother feeds right on. A good herder will watch for such accidental losses and many a lamb has been rescued by the care of the herder to look out for such holes as he tramps along.

Sales and Wants

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LIVESTOCK NOTES

By MAC

Dr. Creelman, of the O.A.C., attended the big Cabana Molstein sale at Buffalo.

H. D. Smith, the energetic secretary of the Hereford Breeders' Association, reports everything booming among the "pale faces."

The Hereford *Journal* has just turned into its tenth year with 164 pages for a regular issue. Since January, the average size of that publication has been 140 pages.

Daisy Butterfly—117053, a Shorthorn, owned by Edward Knight, Vanessa, Ont., has made a creditable record as a 2-year-old. She gave 9,114 lbs. of milk in 365 days.

A. and W. Whitelaw, of Guelph, have a choice flock of Leicesters at present. One two-shear ewe and a couple of rams, especially, will take some beating at the fall shows.

Two Canadian bred bulls, Newton Perfection, bred by J. J. Elliott, Guelph, and Huron Sort, bred by Wm. D. Dyer, Oshawa, were included in the big exportation recently sent to South America from the United States.

Prof. Wade Toole, of O.A.C., Guelph, is very ambitious. Last year he decided to capture the Bronze Bull at the Chicago International and he did. This year he has decided to "get" the scrub bull of Ontario. Let us help him on to success.

The work Hayes Walker has done for his breed has had a wide influence in the success attained. The whole-hearted support he has had from his association and from individual breeders has been a tremendous factor in the wonderful results obtained.

Dean Farrel, of Kansas State College, writing in *"The Shorthorn World"* says: "Efficient livestock production may be possible in the absence of efficient marketing, but efficient marketing cannot reasonably be expected unless we have efficient production."

Canadian horsemen will see a new competitor in the ring this fall. The La Fayette Stock Farm Company have a number of Percherons which they intend exhibiting. Mr. Geo. R. Crouch, the genial vice-president, says: "Business is good and we are here to stay."

Years of careful breeding and selection have made a reputation, which is recognized from coast to coast, for Jas. Bowman, of Elm Park Farm, Guelph. Mr. Bowman still retains the famous sire, Young Leroy. This has been to a great extent the secret of his success. He judges his herd sires by the kind of offsprings they produce.

Geo. E. Day, Secretary Dominion Shorthorn Breeders' Association, is planning an extensive advertising campaign for the Western Show Circuit.

The man who whispers down a well
About the things he has to sell,
Will never reap the golden dollars,
Like him who climbs a tree and hollers.

An American buyer on looking over a very excellent young bull made the following statement: "I would gladly pay the price you ask, for he is really a good one, but neither he nor his sire, though both good, have been given any publicity. You are asking as much for him as I would have to pay for a *son* of a sire whose name is constantly before the public." This is an additional evidence that it is profitable not only to have the good ones, but let the fact be known.

Launching of an international grain and hay show which will be on a par with the annual livestock exhibits and of a nation-wide non-collegiate livestock judging contest, are two of the new features that are to be added to the 1919 International Livestock Exposition at Chicago.

Important changes have been made in the sheep classification and this should serve to bring out an increased entry this year.

Practically every department is showing increased offerings in both regular and special prizes.

Jersey breeders in Canada will be pleased to know that 93 head of Jerseys sold for over $93,000 at T. S. Cooper's sale at Coopersbury, P.A., last week.

B. H. Bull & Son, the well known Canadian Jersey breeder, had 15 head in the sale which averaged $1,150. Their Theatre Cup cow, "Wonder Mary," topped the sale at $3,300.

Mr. Gordon Duncan, of the firm of D. Duncan & Son, Todmorden, bought two animals—one female and a bull.

NEWTON LOYALIST BRINGS $2,500

By Geo. E. Day

F. R. Edwards, Tiffin, Ohio, held a very successful sale of Shorthorns in Chicago on June 5th. In the offering, Mr. Edwards sold a number of cattle obtained from Mr. J. J. Elliott, Guelph, Ont. The Elliott cattle comprised the bull, imported Newton Loyalist, nine females, and five calves which were sold with their dams. Newton Loyalist sold for $2,500, seven cows, five with calves at foot, averaged $2,082, and two young heifers sold at $900 and $775 respectively. This sale constitutes a striking illustration of the value attached to Canadian Shorthorns in the United States, and indicates that prices for Shorthorns in Canada have a long way to go before they reach the level of prices which Americans are willing to pay for good cattle.

GRASS OR STABLE FOR THE CALVES

By Prof. H. H. Dean

GENERALLY speaking, calves are better kept in the stable during the first summer, except where stable conditions are not good, and where there is not enough labor to look after them and keep them dry and clean. The only other exception is in the case of calves dropped in the early winter, and which have had three to six months of milk and more or less dry feed. Such calves may be all right, if turned out to grass as soon as the pasture is good and the weather warm and pleasant. Particularly is this the case where milk and other feed is scarce on the farm. On farms where milk is sold to the cheese factory, or milk condensery, it means a shortage of milk for calves, and under these conditions calves would probably do better outside than if kept in the stable.

The chief advantages of keeping calves in the stable the first summer are:

1. They can be fed milk and other feed as required, which is often neglected when calves run with the cows, or are pasturing some distance from the barn.

2. Calves in a clean, well-ventilated stable are protected from the hot sun, storms and flies, which often prevent that good growth which is essential for a well-nourished thrifty calf.

3. If allowed to run with the herd, the older animals are likely to "boss" the calves and may injure them, or deprive them of their proper share of feed.

4. Cases of sickness, such as indigestion or "Scours" are more likely to be noticed, and properly treated, if the calves are inside where they are seen frequently.

5. As a result of this better care and feed, better cows are more likely to be reared, which means larger milk-flow and larger returns to the owners of cows.

PORTABLE CHICKEN COOP

A LOS ANGELES man has devised a portable chicken-coop.

He uses the half rims of buggy wheels, as part of the framework, attaching them to a square frame that forms the bottom of the coop. A strip of wood attached to the sides of each rim holds the wire in position.

The frame is covered with wire netting, which is an advantage, as it allows plenty of sunlight to reach the chicks. The coop is very light in weight, making it easy to transfer from one spot to another.

A good type of Percheron Horse

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The Canadian farmers and ourselves have been friends for more than eight years. Our business relations have been very intimate and profitable both ways — to the farmer and to us. We have given full measure of service—real fence value. That means repeat orders. Once a Sarnia fence customer, always a Sarnia fence customer. That is especially true of Sarnia poultry fence. You get real fence value, durable and strong, with all extra profits eliminated, when you deal direct with us on our Factory to Farm one profit plan

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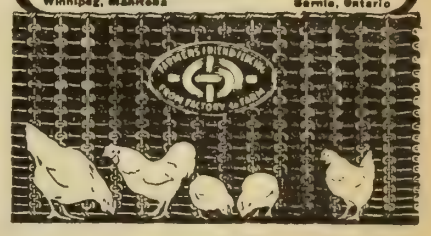
Buy no Poultry fence any part of which is made of light wire. The life of the fence will only be the life of the lightest wire. A chain is no stronger than its weakest link. The Sarnia knot —in fact all parts of our fence are made of the same size wire. We guarantee the Sarnia fence to be made from Government guage, high grade wire that stands the acid test, and to be the most perfectly woven Poultry fence on the market. Western Canada supplied from Winnipeg. Get our low price list and descriptive literature before you buy Poultry Fence Address nearest office.

THE SARNIA FENCE CO., Limited
Winnipeg, Manitoba Sarnia, Ontario



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W. F. YOUNG, P.D.F.,
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Designed and constructed to develop maximum power, to secure flexibility, to insure absolute certainty of operation under all motor conditions, to economize fuel consumption—the Vesuvius is so good—it is known as

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Write for free literature—you will be surprised how cheaply you can obtain this perfected cutter.

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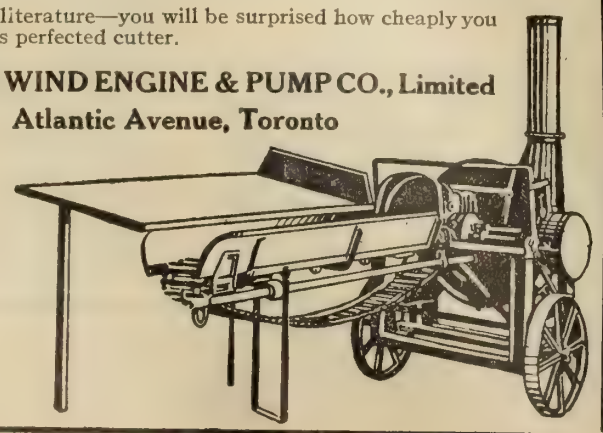
Atlantic Avenue, Toronto



Montreal
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FARM ENGINEERING

Making the Farm Tractor Pay

By L. C. HEIMPEL

"BUY a threshing machine and lose your farm." This is an old saying which originated when threshing machines were young. The reason for it was this: At that time the machines were imperfect, expensive, complicated in operation and not overly efficient in their work. We say this with all due respect to the machine, because we realise that the first thresher was a tremendous step in advance in the progress of agriculture. Yet to invest in one of the earliest types was a matter which sometimes meant ruin to the investor. Is the same true of the present-day tractor on the average farm? We think it is not true, though we must make this answer a conditional one.

A tractor costs a lot of money and we cannot do a great deal of work with the tractor only. We need plows, discs, separator, grinder and other machinery with which to utilise our iron horse to the full extent of its usefulness. These extra machines cost a good deal more money than the tractor itself. In short, to buy a 10-20 tractor and outfit costs well up to $3,000. To be a profitable investment such an outfit must do our work as cheaply as we can do it with horses and besides that earn enough to meet interest on the investment of, say, six per cent., together with an average depreciation cost of fifteen per cent. on the whole outfit. That is on a $3,000 outfit we must meet an annual cost of $180 interest, plus $450 for depreciation, or a total of $630 over and above running expenses. Perhaps we are figuring too severely, yet this is the way the business man looks at an investment, and we must do the same if we would do business farming.

Far be it from us to say that a tractor and outfit cannot be made to pay, but we do say that it must be kept at work as much as is possible if it is to be a paying proposition. For example, if we do sixty-three days of work in a year with our tractor, the overhead charges will be $10 per day—a large sum. If we do two hundred days of work, the overhead will be only $3.15 per day—quite a difference. The more good paying work we have for our tractor the better it will pay.

Redeeming Features of a Tractor

There are some features about tractor operation which cannot well be valued by the dollars and cents method, but which we must mention if we would do the machine justice. The tractor enables its user to do more work with the same help than was possible without it. Furthermore, in such work as plowing and soil cultivation it is possible to do a better quality of work than is possible with horses.

The tractor enables the Canadian farmer to crop land which has for some time past been lying in pasture because it was impossible to obtain help to work it. This means that there will be fewer square miles of good land lying, as it were, almost useless; there will be greater production without more help.

Farming is a business filled with "rush jobs." In the spring when the land is fit we must rush our seeding; when haying is in order "rush is the word"; in summer when weather is hot and weeds grow fast we can rush the summer fallow in a manner such as is impossible with horses because of the heat. This kills weeds which would otherwise almost surely live. In harvest time we can take care of many more acres of crop than we formerly could with the horses and after harvest when ground is hard and horses would be sweltering in the heat we can go ahead and prepare our fall wheat ground without feeling guilty of being cruel to dumb animals. All these are advantages which do much to defray the overhead expense, but the tractor user must do these things if he would get his money's worth out of the machine.

What Can We Expect of a Tractor?

We are in the dark as to how many days' work can be found on, say, a hundred-acre farm per year. We have no great fund of information, but if we average up the information available from American sources and our own we are safe in saying that on 200 acres a 10-20 tractor finds from sixty to sixty-five days of work per year. This is too low an average to make the machine profitable on 100 acres.

There should be no trouble to find at least 150 fine days in a year. According to the above, it would require about 500 acres to keep a tractor busy for 150 days. The only way in which we can secure that much work per machine is by means of co-operation.

The Need for More Belt Power Outfits

Since the advent of the silo in our mixed farming communities it is often painfully apparent that the custom outfits are too few in number to take care of the corn crop in the short time procurable for this work. It is here that a co-operative outfit works in very nicely. Silo filling can then be done just when corn is ready; there need be none of those vexatious waits for a custom outfit. After silo filling fall plowing can be rushed through and threshing will follow. As a closing job such an outfit can do grinding and crushing of grain, cutting feed and bedding and wood sawing, after which the outfit can be overhauled for another season's run.

A small group of farmers equipped with such an outfit can enjoy all the benefits of a privately owned outfit at small cost. They can be reasonably sure of immediate service when needed and at the same time feel sure that, if they have a good operator, their work is being done as cheaply as possible.

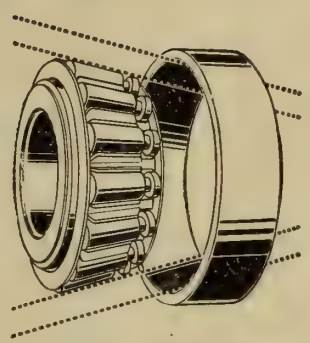
In another article we will treat of the organization and running of a co-operative tractor club.

CO-OPERATIVE TRUCK LINE OPERATED BY FARMERS

THE unusual success of a rural co-operative experiment in Maryland has led the Department of Agriculture to suggest similar enterprises in other agricultural sections. The farmers in this venture, who all live about 25 miles from their consuming centre, decided a few years ago that the time, expense, and manner of shipping their produce to market, and of securing supplies from the city, were all unsatisfactory. So ten of their number secured from the State a charter for a "Farmers' Co-operative Company," intended primarily for transportation of farm produce, but enabled by the liberal terms of the charter to engage in almost any business.

The company was capitalized by the sale of 200 shares of stock at $25 each, making it possible to buy a four-ton truck, hire an operator, and start the service. As most members live along the main highway, they found it convenient to place their produce on small roadside platforms, from which collection was easy. And with low rates and quick service the business grew, another truck was bought, and a small receiving warehouse rented in the city.

TIMKEN TAPER



Dotted lines show how the inside of the "cup" of a Timken Bearing is *tapered* to fit over the *tapered* rollers.

Two Ways Out

When heavy trucking churns up the mud and cuts ruts deeper and deeper—

When mile after mile of sand holds back the wheels—

When rain-cut hilly roads and washed-out culverts call for careful driving—

For such ills as these, there is only one cure.

That's the remedy that begins with plow and scraper and ends with a hard-surface, well drained highway. Therefore, get back of the Good Roads movement and push it for all you are worth.

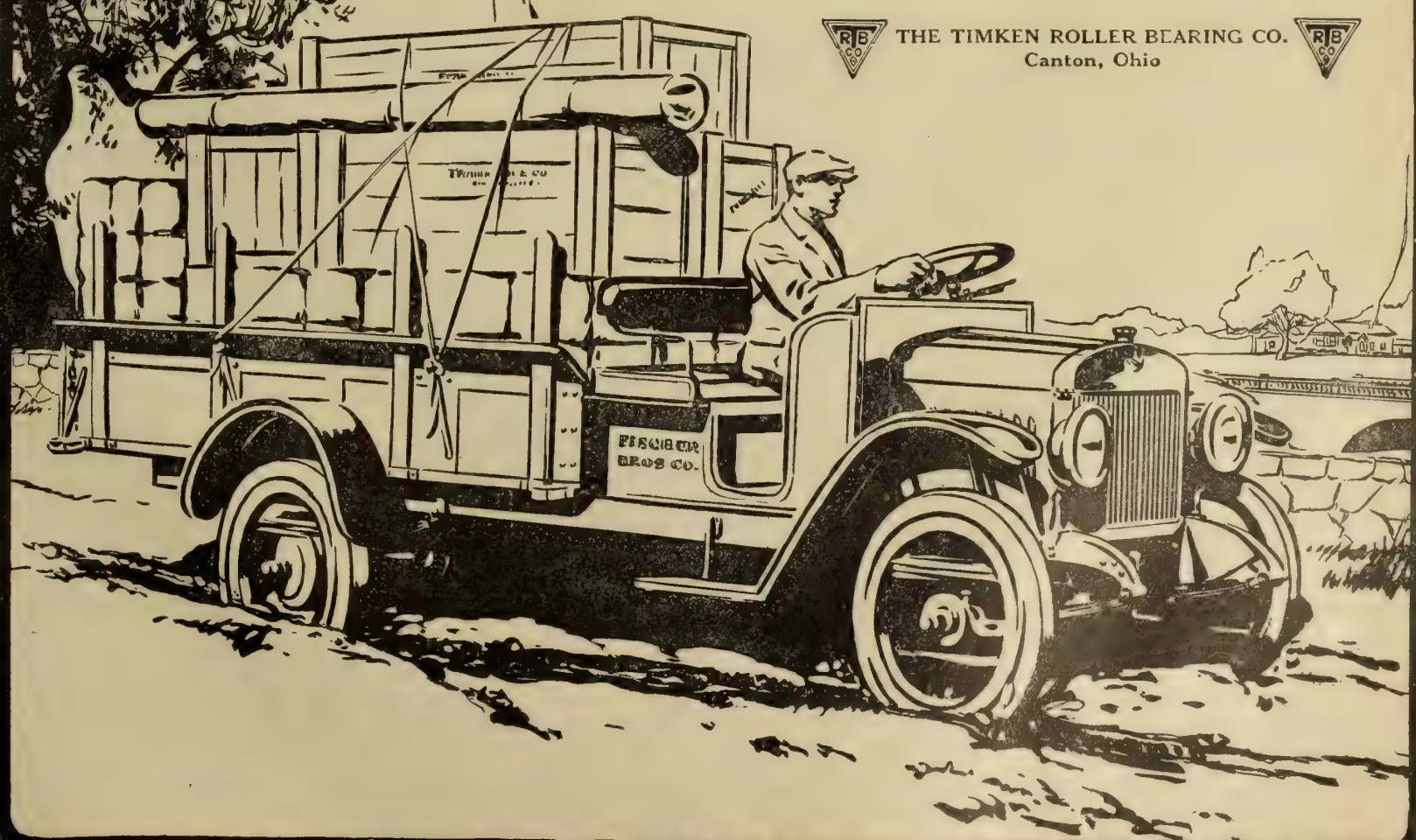
But there's a preventive against bad road DELAY that is written in the specifications of the trucks, and reads: "Reliability," one of the essentials of which is the selection of bearings that are capable of out-lasting the truck on which they serve.

Many builders have found the remedy in Timken Tapered Bearings, to which there is practically no "wear-out" except by abuse or accident. After a Timken Bearing has been slightly loosened by thousands of miles of wear, a part turn of the adjusting nut or removal of a shim puts all parts back just as when new.

As for Timken Taper—it always stays the same, ready to take end thrust and downward load—to keep gears up to their work—to stand guard over transmission and differential gears—ready to resist the constant heavy push of worm or pinion—ready to add at every point to truck life as well as efficiency.

There's more about these bearings in the booklet, "How Can I Tell." A copy will be sent to you on request.

THE TIMKEN ROLLER BEARING CO.
Canton, Ohio



Co-operation in this field proving so successful, the company has tried co-operative buying and selling. Members notify the secretary of their needs, he groups them, and buys in the city at wholesale rates. Good results in selling have been effected, too; as in the case of the company's eggs, which reach the city in such fresh condition that the price is considerably increased. It must be remarked that no attempt is made to deal directly with the consumer. The Government warns that a venture of this kind should be started only after a thorough survey and analysis of the local situation. If, then, it seems well to proceed, careful thought must be given to the amount of capital stock advisable, to the election of able directors, to the purchase of efficient trucks, and to the choice of expert, conscientious operators.

In and Around the Dairy

By W. H. UNDERWOOD

WE have had a number of years of experience in raising and developing dairy heifers and have found it best not to have them freshen before they are two and a half years of age. We have had heifers freshen from one and a half to three years old and those freshening while young have been hindered considerably in their growth and development, sometimes never making as large cows as those calving at an older age. We have also seen heifers which dropped their first calf at a year and a half of age mature very satisfactorily and make splendid cows but they took one to two years longer in maturing. These cases of course are rare. In freshening from two and a half to three years of age the heifer is more matured and therefore in condition to milk much better than if younger. Calving at this age will not alone make them what they ought to be if they are not liberally fed and well cared for. They must have proper care and feed from calfhood to maturity to make big, strong cows and heavy milk producers.

If a cow is listless and inactive and pays but little attention to what is going on around her the owner may be sure that something is wrong with her. If her appetite is variable either as regards the quantity or quality of feed or is so depraved that she chews wood or bones the same conclusion can be drawn. When she is giving milk the quantity produced and especially the uniformity of the yield will be a good index of the real condition of the cow. Any marked decrease that is not manifestly due to a change of feed, the approach of the time for freshening or something not naturally affecting the health indicates some constitutional disturbance. Every dairyman should observe his cows so closely that he will be able to detect at once even a slight departure from the appearance of perfect health. Standard books on the diseases of cows and other stock cost but little and every keeper of cows should have one or more and be so familiar with their contents that he can form an intelligent opinion as to the nature of the trouble when any of his cows are ill. And he should keep on hand and know how to administer simple remedies for minor ailments. But except in the way of giving "first aid" he should not attempt to treat severe attacks or cases of less violent but manifestly serious diseases. In these cases the services of a competent veterinarian should be employed.

It is not at all uncommon among dairy cows to find the udder covered with a thick growth of long hair which may be of some protection to the udder in some respects, still from a sanitary standpoint and a comfort to the cow while she is being milked these hairs are detrimental. Under the usual farm conditions this growth of hair is commonly covered with filth and even in well-kept dairies this hair unless kept well clipped will collect more or less dirt and trash. In many cases too these hairs will persist in falling into the milk pail. To prevent occurrences such as those the hairs on the udder should be kept clipped closely, thus preventing the accumulation of filth and making a much better success of cleaning the udder before each milking. Leaving these long hairs on the udder is a good way to make a bad kicking cow out of a heifer that has the making of a fine cow. When the milker clasps the teats during the milking process the long hair surrounding the upper part of the teat is included and as each stream is drawn these are given a hard, vigorous pull. It is no wonder then that the young cow protests with a lively kick. A common pair of clippers such as are used on horses is the best for clipping the hair from the cow's udder. The clipping should extend over the flank and thigh on the right side as this will make it more easy to keep the udder clean. In the production of strictly first-class milk the above precaution should always be observed as well as the usual cleaning of the udder. It is certainly a cleanly custom.

PUZZLING OVER CALF-REARING BUSINESS

Continued on page 15

from a pail the milk can be consumed in a few seconds. A calf, as a rule, will drink about twice as much as is advisable to give it. The above methods presuppose scales and a thermometer. Some feeders use measures instead of scales. One very successful calf raiser uses a quart measure, and gauges the temperature of the milk by feeling it with his finger. The novice, however, will make no mistake in using a thermometer. It may take a second longer; but the feeder will be more careful with his work and all guessing will be eliminated.

It will do no harm to remind the herdsman that there is no better time than this stage in a calf's life, to record its birth and general particulars in the herd register. The calf should be marked either by a tattoo number in the ear, or by placing a strap with a number on it around the calf's neck—an excellent practice which is followed by many leading breeders. For the time, the strap may be used as a means of leading and tying the calf and presents a very easy means of locating the number. Tattooing is very often carelessly done and is apt to lead to mistakes. When the calf gets too large for the strap about its neck, and has sufficiently large horns, a lock and chain can be placed around them. The locks and chains look very attractive and are well worth their cost. Tattooing is so simple and so inexpensive that it should be done at all events. But care should be taken not to do it until the calf is at least three or four days old, as the number after that time will be much more legible. We have not been able to get nearly as good results from the use of the ink pencil which manufacturers are now selling with their tattoo outfits as with the liquid ink which has formerly been in universal use.

It is preferable that the calf be kept separate with solid partitions so that it cannot come in contact with other calves, for a time at least. However, I have seen as many as thirty calves in a single box stall in the stable of one of America's best dairymen.

Follow closely the system of feeding as given in the chart. At the end of ten days commence feeding twice a day. The change from whole to skim milk should be made gradually, extending over a period of at least one week, each meal lessening the amount of whole milk, and adding skim milk. The calf will now commence to eat hay and some grain. The skim milk is increased according to the chart until the calf is six months old and receives 9 lbs. to a feed, or 18 lbs. daily.

Possibly the greatest trouble dairymen have with calves is due to scours. This should be treated promptly in the first stages of the trouble. At the first sign of scouring, cut down the feed supply, principally the amount of milk, in half. If a sudden and vigorous attack, take all of the milk away for one or two feeds, and give a dose of castor oil, 1 to 3 oz. in a pint of milk (according to the size of the calf). In this case increase the feeding very slowly.

Equally important as the feeding is the cleaning and daily *scalding* of all stalls, mangers, feed and water pails, stanchions, etc. This is the most important thing a calf raiser has to watch. It is the very place, too, in which most men are most careless. Every minute, every hour spent in this way will pay over and over again. The calves themselves, too, should be groomed daily, and care should be taken that the bedding and stalls are always dry and clean.

According to the chart, we must not feed calves clover or alfalfa hay until they are five or six months old. That is because they are legumes and are liable to bring on scours. The calf, too, gets sufficient mineral matter for the first six months in the skim milk. After about six weeks, the calf should be gotten as soon as possible into quarters which will permit its running in the open air with its feet on Mother Earth. This will act as a tonic on its whole system. By building small houses similar to poultry colony houses, with a small yard attached, the house can be moved from place to place. Whether or not a calf is out of doors will depend on the weather. It it is too cold, roomy quarters should be provided indoors, and, if possible, an exercising yard where they may be turned loose for a while each day. The calf, too, should be led as often as possible to insure its being thoroughly halter-broken.

With most breeds of cattle, symmetrical horns are a great asset, and often add dollars to an animal's value when being sold. It is all a question of commencing the first moment the horns are sufficiently large and sufficiently rigid to permit their being worked upon. We have found that a type of horn trainer manufactured in the United States gives best results. However, by boring a hole in each horn and inserting a piece of hole wire, which can be twisted and tightened from time to time, a fairly good job can be done. The reason we prefer the ready made horn trainer is that you can get started on the horns earlier; and an early start is three-quarters of the battle.

Finally we must remember, that in developing a calf of one of the dairy breeds, we are preparing an animal for the production of dairy products. Thus care must be taken that the calf does not become too beefy. During the first six months, our main object is to build bone and muscle for a good frame and to develop a barrel for large capacity. Nothing will tend to develop this better capacity like the feeding of hay.

But above all, in conclusion, if you would be successful, be more than careful about all details. *Look after the calves and the cows will take care of themselves.*

CARE OF THE BELT

LEATHER belts must be protected against moisture. Rubber belting gives best satisfaction where belt is exposed to weather. It is desirable to run the grain (hair) side of leather belts next to the pulley. Belts should be kept soft and pliable. For this purpose blood-warm tallow dried in by heat is advised. Castor oil dressing is good. The diameter of the pulleys should be as large as possible. Large pulleys reduce belt slippage. The pulley should be a little wider than the belt. When it is convenient to measure the length required, apply the following rule: Add the diameter of the two pulleys together, divide the result by 2, and multiply the quotient by 3¼, then add this product to twice the distance between the centres of the shafts and you have the length required. To figure belt speeds apply this rule: The circumference of the pulley in feet times the r.p.m.

STRIVE FOR HEALTH

THE need is for good, clean, healthy men and women; therefore, be healthy. Strive your utmost to maintain the best of health. Make your home and its environment healthy, we the children's school healthy, not forgetting that the unit of the town or city is the home; and, as we each make our home and its environment healthy, we are each doing our bit to improve the health of the community in which we live and the country generally.

A VICTORIA COUNTY HERD

"SUNNY Acres" the home of G. C. Channon in Victoria County is well named. Not only does the sun seem to shine more directly on this land, which is evidenced by the luxuriant growth of clover, corn and all cereal grains, but even the "Doddies" smile through the bars as you pass. Furthermore, the proprietor greets visitors with a welcome smile which we found to be more than superficial.

Mr. Channon, although, a young man has by careful breeding and selection built up a large herd of Angus cattle that are a credit to himself and also to the breed in Canada.

At present Mr. Channon has some splendid young stock for sale. They are low down, thick, sappy individuals that are bound to grow into superior animals. Any one desiring stock should look up Mr. Channon's advertisement which appears in this issue.

COLUMBINES

THE Columbine is a dainty and beautiful spring flower of extremely easy culture and a long period of bloom.

Grows in any good soil with some shade.

The seed, which is very fine, is best sewn in May or June in flats and kept moist. By following this method a far greater number of plants are obtained for the same money, than if sewn in the open ground.

The tiny plants should be transplanted into well-prepared soil fifteen inches apart. They are most effective in groups of not less than fifteen to twenty plants and make a beautiful picture of delicate tints. Their long stems rise sometimes forty inches above the foliage, which is lovely in itself.

Be sure to buy the "Long-Spurred Hybrids"—mixed.

THE THINGS THAT COUNT

Now dear, it isn't the bold things,
Great deeds of valor and might,
That count the most in the summing up
of life at the end of the day.
But it is the doing of old things,
Small acts that are just and right;
And doing them over and over again,
no matter what others say;
In smiling at fate when you want to cry,
and in keeping at work when you
want to play—
Dear, those are the things that count.

And, dear, it isn't the new ways,
Where the wonder-seekers crowd,
That lead us into the land of content, or
help us to find our own.
But it is keeping to true ways,
Though the music is not so loud,
And there may be many a shadowed
spot where we journey along alone;
In flinging a prayer at the face of fear,
and in changing into a song a groan—
Dear, these are the things that count.

My dear, it isn't the loud part
Of creeds that is pleasing to God,
Not the chant of a prayer, or the hum
of a hymn, or a jubilant shout or
song.
But it is the beautiful proud part
Of walking with feet faith-shod;
And in loving, loving, loving through
all, no matter how things go wrong;
In trusting ever, though dark the day,
and in keeping your hope when the
way seems long—
Dear, these are the things that count.

—*Ella Wheeler Wilcox.*

WHAT IS THE IDEAL TRACTOR

Continued from page 13

dust which rapidly wears the piston, piston rings, and cylinder walls. The writer has seen factors that had not been used one whole summer with the cylinder bore worn out of round over 1/32 of an inch, a lot in gas engine practice.

Several types of air cleaners have been put on the market to overcome this rapid depreciation and consequent loss of power in tractor motors; but none have really met the need except the water type air cleaner. In this type, which is without doubt the ideal air cleaner, the air is sucked down through water, where all the dust is left behind —that is, if the air is broken up into fine globules. This does not reduce the power of the motor; but insures clean, moist air for the cylinders.

The Ignition System

The ignition system is the most important part of the tractor, if it were possible to compare one part with another. For burning kerosene the hotter and more powerful the spark the better, and for this as well as for mechanical reasons the jump spark ignition is best. A good hot spark is essential to the rapid combustion of kerosene. Then, too, the make and break mechanism will not stand up and keep properly timed when the speed of the motor is up around 500 revolutions per minute; and, with the better balancing of the moving parts of the motor and greater refinement in design and the machining of the engine parts, the tendencies have been to speed up the motor to get more power.

In closing there are several points worth while that have not been mentioned in these articles. The ideal tractor must be fairly accessible for adjustment and overhauling and inspection. Is it hard to get at the crank pin and crank shaft bearings How about grinding the valves? These and others are important considerations.

The ideal tractor must not be too wide. It should be able to pull its plows from a central draw bar hitch and keep out of the furrow. Pulling a heavy load with the hitch off the centre line of the tractor is hard on the outfit and causes hard steering. Plowing with the right drives in the furrow throws the tractor out of level and causes end thrust on the wheels and axles. Some object to having the right driver out of the furrow on account of the packing affecting the depth of plowing of the inside plow. The ideal tractor should not pack to this extent. Then, too, in breaking or sod plowing one can keep working longer and start again sooner during rainy weather, while running in the furrow somewhat packs the ground under the plowing.

While discussing the matter of draft of tractors there is another item worthy of mention—that of the spring draw bar. A good compression spring on the draw bar is, for the small additional expense, worth while. It takes a good bit of the shock from both tractor and plows, and lets the motor into the load much better than does the solid drawbar.

In closing these brief remarks on the Ideal Tractor, which have been written because of much correspondence with prospective tractor owners—and because of a recognition of the limitations of a brief letter on such an important subject, the writer hopes that they will not be taken as a criticism of the gas tractor, but rather as a summing up of the best and most desirable points in the tractor field. No one tractor builder has a monopoly of all the best features in tractors, but it is to be hoped that they will adopt each other's best ideas, and so approach the design of the Ideal Tractor.

EVERY community has just as good roads as it deserves. When it wants better roads badly enough, it will build them. That is the only way they have ever been secured.

Here is a Cletrac Fact — Kerosene Fuel!

IN operating the tractor fuel is an important item.

Gasoline is 36 cents a gallon. Kerosene (coal oil) is 18 cents.

The Cletrac Tank-type Tractor works on kerosene. Not just goes—but *works*—100%.

And the Cletrac uses no more kerosene than other tractors use gasoline.

On this cheap fuel the Cletrac will do a hundred things around the farm—do them quickly and well—save man-power and horse-power—save time and money.

Plow at 3½ miles an hour—the best plowing speed.

Pull a disc, harrow and drag over even muck land to the tune of 40 acres a day.

—*and never pack the soil.* The track-laying *Cletrac rides on top*—your seed-bed is perfect.

You'll want the active, dependable 12 h.p. of the Cletrac to haul stones and logs, grade roads, pull mower, binder, hay-loader and manure-spreader, or a string of wagons.

And you'll want the 20 h.p. of the Cletrac belt pulley to run your feed chopper, ensilage cutter, threshing machine, cement mixer, wood-saw.

Now is the time to find out about the Cletrac Tank-type Tractor. Write the Cletrac dealer or us for our book, "Our Owners Say," the story of what the Cletrac is doing for other farmers—told in their own words.

Ontario Experimental Farm,
Ottawa, Ont.

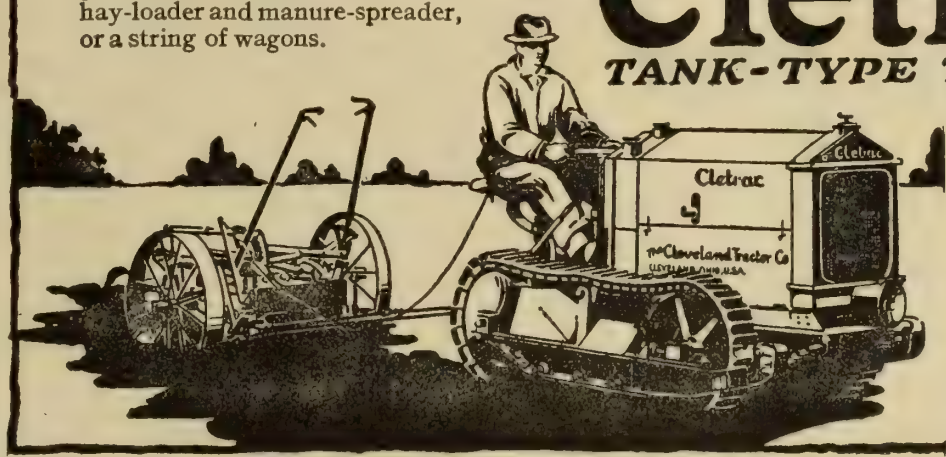
Messrs. Beach Motors, Ltd., 186 Albert St., Ottawa, Ont.:
Gentlemen—

I take pleasure in stating that the work done by you with the Cletrac Tank-type Tractor recently, on the Experimental Farm, Ottawa, was entirely satisfactory, either on plowing, discing or on belt work.

I might put particular emphasis on the satisfaction it gave in driving a No. 3 Massey-Harris Blizzard Blower in filling one of our silos; the power delivered was very even and the motor handled the work apparently with very little effort.

(Signed) D. D. GRAY,
Farm Superintendent.

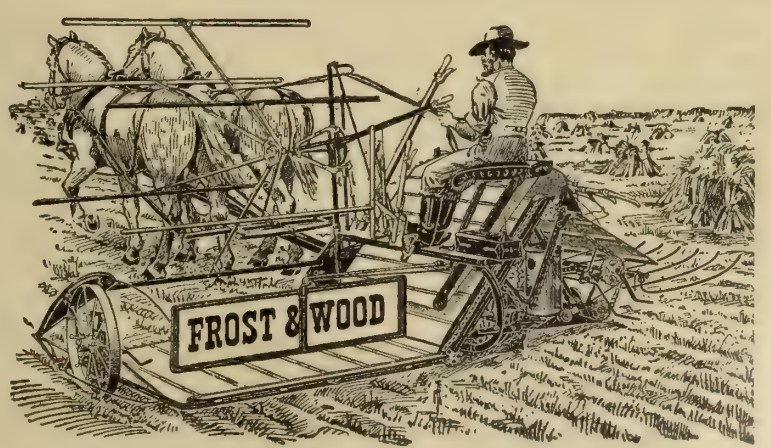
Cletrac
TANK-TYPE TRACTOR



The Cleveland Tractor Co., of Canada, Limited Windsor, Ontario

It Guarantees the Harvest

You have only a few precious days in which to cut and stock your crop so your whole year's work may well depend on the reliability of your Binder. That's why wise farmers buy the



FROST & WOOD BINDER

It has won the reputation, during many years, and under all kinds of Canadian crop conditions as "the Binder that is always ready—and able to get ALL the crop." It's "ready" because its simple, superior, scientific design and its high grade materials keep it out of the repair shop—and it "gets all the crop" because it is so easy to operate that fast, clean work is always possible with it.

LIGHT DRAFT - SURE CUTTING AND TYING - DEPENDABILITY

Its big power wheel and strongly braced steel frame ensure ample strength—high grade roller bearings at all friction points ensure light draft—a wide range of adjustments of the reel ensures that any crop, heavy or light, lodged or straight, is easily handled. Big capacity elevators and positive binding attachment, all show the hand of the master designer. Get a Frost & Wood Binder Booklet from our nearest agent—and see the Binder itself—you'll see why it "Guarantees the Harvest."

The Frost & Wood Co.
Limited
Montreal SMITH'S FALLS St. John

Sold in Western Ontario and Western Canada by

Cockshutt Plow Co.
Limited
BRANTFORD, ONT.

FLEET FOOT

FOR STURDY WEAR

Put the boys and girls in FLEET FOOT shoes this summer. They can have two or three pairs of FLEET FOOT for the price of one pair of leather shoes. The low price of FLEET FOOT and their sturdy wear, make them the most satisfactory and economical summer shoes you can buy for children.

The Best Shoe Stores Sell FLEET FOOT.

DOMINION RUBBER SYSTEM

15

Canada's Opportunity On the Highway of Success—What has that to do with GATES? Everything!

PEERLESS LONG SPAN GATES

The gate pictured below is a companion to the Peerless Perfection farm fencing, strong, durable, with heavy tubular brace, which stiffens it like a steel bridge. It swings true and rigid as an oak door hung by a master mechanic. Lateral and upright wires securely clasped at all intersections and stretched upon a strong rigid frame of tubular steel electrically welded into one solid piece.

For Looks, Wear and Service in appearance a Peerless Gate says: "I am guardian here." For durability it is of heavy open hearth steel wire, galvanized and can't rust at any point. For service it is put together to last a lifetime and is the cheapest best gate made. You will be interested in our Catalog. Write Today for Literature describing all our many styles of Gates, all kinds of Farm and Poultry Fencing for farm, ranch, residence, park, etc. It will pay you well to get acquainted with Peerless Perfection standard of construction. Write nearest office today. Do it now.

THE BANWELL-HOXIE WIRE FENCE CO., Limited

Hamilton, Ont.
Winnipeg, Man.

Cold-pack Canning at Home

By GENEVIEVE

THERE are just two general methods of canning—the "open kettle" method practised since the time of our grandmothers and still used for making preserves and jams and for canning small quantities of fruit that does not break up easily, and the "cold pack" method by which the fruit or vegetables are packed into the jars before cooking, and cooked by setting the jars in boiling water, or in a steam-pressure cooker, or in the case of some fruits in a shallow pan of water in the oven. This "cold pack" method has become more generally known since we began to give more attention to the canning of vegetables, which require a longer period of sterilization than fruit, but cold pack canning is not by any means a new thing. Mrs. Gilchrist, a Toronto woman, has still in her cellar jars of fruit that were canned by this method forty-three years ago. They are part of an exhibit of canned fruit for which Mrs. Gilchrist received a diploma at one of the old provincial exhibitions at Ottawa, and other fruit canned at the same time and opened last summer proved that the delicate flavor as well as the appearance had been preserved perfectly.

The cold pack method has also some other advantages in addition to making it possible to can certain vegetables which would not keep if simply cooked in an open kettle and sealed. In the case of fruits the flavor and shape are better retained, and much of the work can be done away from the heat of the stove. Vegetables and fruit can be carefully and leisurely packed into jars at a table on the porch or by an open window, and the hot work can be reduced to a minimum. An elaborate equipment which is most satisfactory, especially where large quantities are to be canned, can be bought for the process but it is also quite convenient to use a wash boiler or large covered kettle. In either case a false bottom made of wire netting, strips of wood, or a special wire rack made for the purpose should be used. Whatever vessel is used it should have a tightly fitting cover.

IN canning fruits, scald and dip in cold water to loosen the skins and set the coloring matter, peel, cut into pieces the desired size or leave whole and pack closely into clean jars. (For this method jars do not need to be previously sterilized as they receive the same sterilizing as the fruit in the process of cooking). Fill the jars till they overflow with syrup made as explained below and cooled enough that it will not crack the glass, put on rubbers and glass tops, and snap up the top spring or, with screw tops, screw loosely. Set the jars on the rack, fill the kettle or boiler with warm water to the tops of the jars and *after the water begins to* boil, cover tightly and continue to boil the length of time given in the table below. Remove the jars, snap down the second snap or screw tightly and invert to cool. Do not set the jars on a cold surface nor in a draft, for fear of breaking.

Syrups for different fruits and berries are of different density, or require different proportions of sugar. A good standard rule is to allow two cups of sugar to one cup of water for strawberries and cherries; two cups of sugar to one and a half cups of water for peaches and plums; and two cups of sugar to four cups of water for pears, sweet plums, sweet cherries, raspberries, blueberries and blackberries. In each case boil the syrup for one minute before pouring over the fruit. Or an average foundation syrup may be made by adding one and one-half quarts of sugar, or six cups, to one quart of water, and boiling three minutes for pears and peaches, sweet plums, raspberries, etc., or any fruit where a thin syrup will do, and eight minutes for strawberries, cherries, sour plums, or for any fruit where a richer syrup is desired. Of course these rules are only given for a general guide. The housekeeper can easily regulate them to suit her individual standard.

IN selecting vegetables for canning use only the freshest; if possible they should be canned the same day they are picked. The different varieties require slightly different preparation, though the method of canning does not vary. The greens, spinach, beet tops, Swiss chard and asparagus, after being sorted and thoroughly washed, should be blanched in a steamer for twenty minutes, or tied in a cheesecloth square and put into boiling water for the same length of time, then plunged into cold water and packed tightly in jars. To each quart add a teaspoonful of salt, fill the jars to overflowing with boiling water, place rubbers and glass tops in position, screw on the rings lightly and place the jars in the rack in the boiler of warm water, having the water come right to the tops of the jars. After the water comes to a boil keep it boiling for an hour and a half. Remove the jars, screw the tops down tightly and invert to cool. The root and tuber vegetables, like carrots and beets, should be cooked in boiling water until the skins will slip off, plunged into cold water, peeled, packed in jars with boiling water and one teaspoonful of salt to each quart and sterilized for one and one-half hours as explained above. A quarter cup of vinegar added to each quart jar of beets helps to preserve the color. String beans should be blanched for ten minutes before packing in the jars. Two tablespoons of vinegar added to each quart jar help to keep the beans firm as well as to preserve the color. Tomatoes may be stewed in a preserving kettle, filled into jars and sealed, but if they are to be kept whole for salads

he cold pack method is the better one. Select rather small tomatoes, scald, dip n cold water and skin. Pack carefully and fill jars with boiling water, adding he usual teaspoonful of salt to each quart jar or unless you want to use hem for exhibition purposes fill the ars with stewed tomato or strained omato juice to be used for soup when he tomatoes are removed. A concenrated tomato soup mixture may be made by cutting up a few onions, parsey and cloves in a kettle of tomatoes, cooking slowly for about three-quarters f an hour, rub through a colander, eason with salt, pepper and sugar, reurn to the kettle, bring to a boil and eal in jars. Corn should be blanched n the cob for fifteen minutes to set the milk, plunged into cold water, cut from he cob and packed solidly into jars with teaspoonful of salt and a little sugar dded to each quart if desired. Steriize in the boiler for four hours, or for ne hour on each of three successive days. The blanching and cold dipping s supposed to make this intermittent sterilization unnecessary but it is safer or corn and peas. A certain little rganism which is very difficult to kill often infests these vegetables, going nto a spore stage in which form boiling oes not affect it in the least. It cannot tay in this spore form longer than hree days at a time, however, so if the oiling does not catch it on one of two uccessive days it is sure to get it on he third. In carrying out this intermittent sterilization cook the vegetable n the can for an hour and seal as sual; the next day loosen the ring or lamp but do not disturb the glass top, ut into the boiler and cook for another our; repeat on the third day. Where steam-pressure cooker is used this recaution is not necessary. Corn and reen peas can be kept so well by drying in the oven, that if fuel is not too ostly an item—and where a coal or ood range is used no extra fire would e required—drying has much to recommend it in that it saves the trouble of anning and the cost of containers. To repare corn for drying, boil it on the ob for fifteen minutes, then cut it off he cob, dry in the oven and put away n cotton bags. An ear or two left rom any meal can be saved in this way.

IME-TABLE FOR COLD-PACKED METHOD

	Blanch or Scald Minutes	Hot Water Bath-Outfit 212° F.
Apples	2	15-10
Apricots	1½	15
Asparagus	5-10	60-90
Beans	5-10	120
Beets	6-10	90
Beet Greens	10	90
Blackberries	..	12
Blueberries	..	12
Carrots	5	90
Cherries	..	15
Corn	5-15	240
Currants	..	15
Grapes	..	15
Gooseberries	..	15
Pears	1-2	15
Peaches	1-2	15
Peas	5-10	90-100
Pineapple	5	30
Plums	1-2	15
Pumpkin	5-10	60
Quince	2	30
Raspberries	..	10
Rhubarb	1-3	20
Spinach	10-15	60-90
Squash	5-10	60
Strawberries	..	8
Swiss Chard	10	90
Tomatoes	1-2	22

THERE is nothing complicated about the process of canning but sometimes rather puzzling things happen. The housekeeper finds a jar perfectly sealed but mold has formed on the top of the fruit; she can't see how the mold got into the jar because it was air-tight. The mold didn't get into the jar—it was there all the time like a dormant seed and the jar wasn't heated hot enough or long enough to kill it, so as soon as they had the fruit to feed on mold plants began to grow. To prevent this, the jars, however clean they may be, should be sterilized before they are filled; a good way to do this is to put them on a rack or folded towel in a boiler, cover with water, bring the water to boiling point and boil five minutes; the tops can be sterilized with the jars and the rubbers scalded well. Before sterilizing a jar, test it to see whether it can be made air-tight, by partly filling with water,

Continued on page 45

Candy not a Luxury

IT would be folly indeed if a belief detrimental to the public welfare—and proven false—was allowed to last any longer. That false belief is that candy is a luxury.

Candy is food in one of its most useful and attractive forms.

All elements used in the composition of Candy are recognized useful foods.

Candy contains large quantities of sugar, some fats such as butter; also nuts, fruits, corn syrup, chocolate and flavoring.

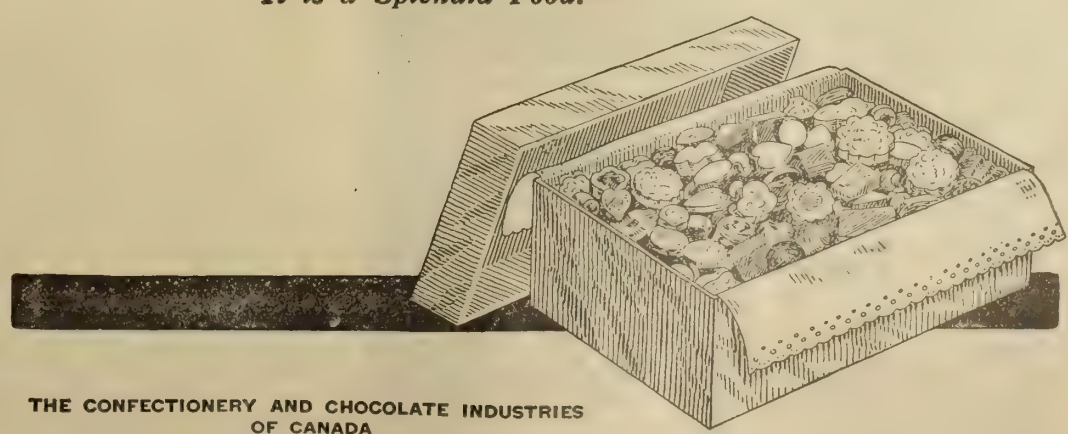
Combine these ingredients in proper proportions and you have a balanced ration—the high food value of which is recognized by all leading food and medical authorities.

Sugar supplies the bodily demand for fuel. Fruits and nuts produce essential nutriment; chocolate is a most nourishing fat food and delightful stimulant. The flavorings stimulate the digestive organs and increase the flow of saliva and gastric fluid.

Eat more candy!

Medical science has established its value as an energy-producing food.

Serve Candy as a Dessert.
It is a Splendid Food.



THE CONFECTIONERY AND CHOCOLATE INDUSTRIES OF CANADA

11

The Wonderful convenience of EGG-O Baking Powder

Have you ever wanted tea biscuits for supper, but felt that you couldn't have them because you were going out for the afternoon and wouldn't have time to mix the dough after you returned ?

Why not use Egg-O Baking Powder and mix the dough before you go, putting the dough in a cool place until you return? Then put into the oven and you'll have beautiful, light biscuits. Try it.

When Egg-O is used, it improves your biscuits and cakes to allow the dough to stand. And it is a wonderful convenience!

Egg-O is a different and better baking powder

Egg-O Baking Powder Co., Limited
Hamilton, Canada

17

Add to the Beauty and Dignity of Your Residence

AN "IDEAL" Lawn Fence surrounding your property will cost little and immensely improve its appearance and exterior value.

On request, we will be pleased to send illustrated booklet describing various types of "IDEAL" Lawn Fence, Gates, Vine Trellis, etc., quoting freight-paid prices ranging from 8 cents a running foot.

Ideal Lawn Fence

IDEAL FENCE & SPRING COMPANY OF CANADA LIMITED
WINDSOR ONTARIO

15

Health Building in School

By ELIZABETH HARCOURT, R.N.

WHY add health development to a curriculum already overcrowded? Of what value is it to the child? Of what value to the future generations?

We cannot completely understand the need and scope of the health work among children without going back a few centuries and considering the changes that advanced civilization has produced upon the human body and mind. In the days of our feudal ancestors, when men and women alike lived out of doors, the men rode horseback, fought hard, and thus developed a strong physical endurance. The need of a varied education did not exist. The wonderful physical development of those days has, during the last two centuries, been subject to a great strain. Contrast to-day's busy centres in a fair sized city or town with the space and wholesome out-of-door life of the past and what do we see?

In the past there were physical activities in the open air, little continued mental concentration, little use of the eyes by artificial light, simple garments, simple food, no elaborate house-keeping as known to-day, altogether allowing for a full bodily development and a strong enduring nerve force. To-day we find that the rural school buildings have not been and are not being built with the child's full development in mind. To-day we have cities and towns with buildings as dwellings close together, paved streets, factories with thousands of people, young and old, crowded together with little opportunity for fresh air, large office and business buildings of all kinds with hundreds of men and women sitting steadily at desks all day with artificial lighting, reflected heat and light from high buildings and pavements, air rebreathed many times, places of amusement poorly ventilated and lighted, and many, many more conditions conducive to deteriorating the bodily strength. We are living at a terrible pace to-day. It has gradually developed into a gallop. It could be likened to a gallop down a crowded street where the strain to save one's own life and that of others is exhausting in the extreme.

Just let mind and heart relax from this rapid pace and think of a daily life in the air with God's open heavens and fields sending back an answering smile and a promise of day and night, summer and winter, seed time and harvest, as long as the world stands. The thought sends a feeling of calm and rest to a weary body.

The change in environment has come so rapidly, even if it has been gradual, that our physical and nervous mechanism has not been able to adjust itself rapidly enough. The result is a lessened physical strength and nerve force so weakened that the balance of mentality and physical endurance is constantly being lost. If to-day's civilization is to continue to advance during the future, are we to look forward to a race of people continuing to decrease in physical vigor and mental endurance, because of the lack of a strong physique with a stable nerve force?

Wherein can the child of to-day be aided? The first thing a parent or provider thinks of is food, clothing and shelter; these are essentials and certainly factors that a provider should attend to. If such essentials are thoughtfully provided and the child is sent to school at the age stipulated by the law, the institution of public instruction then accepts its responsibility as a provider for intelligent training of the mind for a stipulated number of years. While the mind is being trained it is necessary to be assured that the child has had the physical and mental benefits, of having been supplied with the essentials of life for normal growth in the midst of to-day's civilization. The child has inherited various physical tendencies that the school cannot and should not have to be entirely responsible for overcoming, but the home's responsibility cannot be discussed at present.

FOR a child to have full benefit of th intellectual training given by th State, it must have a "sound mind in sound body." The body is the shelte of environment for the brain and it accompanying set of nerve fibres, an is the means through which they ar nourished and kept in repair. If th shelter is not sound or well-built, it al lows of the possibility of a leak here an there interfering with the growth o tissue, or else the destroying of part that have to be rebuilt. To accomplis the rebuilding during this growin period means taking from the suppl of material that should have been use in the steady construction of a soun strong shelter, and an enduring nerv force.

Now, if a growing child has one o more leaks, such as poor lung develop ment, obstruction of nasal passage both of these causing an insufficient sup ply of oxygen, (and oxygen is absolutel necessary for growth and function), o imperfect vision, or poor teeth, or poo posture, each defect or leak allowin of waste of energy, poisoning of tissu and building material, cramping an pressing out of shape parts of the inte nal mechanism, his normal growth ce tainly is impossible. Can we expec a perfect body and a sound mind, bot capable of fulfilling their function the child or to the State, when there ar so many ways for the building materi to be used?

We need first, then, to find the leak in the shelter and aid nature, the build er, to accomplish her task of rebuildin by either the removal of defects, th supplying of artificial relief throug the advanced scientific knowledge to-day, as glasses or dental work, ar through proper food and sleep ar physical exercise in the open air, th establishing an even circulation blood in every part of the body. Th need for the latter is very great, fo only as the blood flows freely throug all parts of the body can it be proper nourished. This does not apply to th child with a physical defect or lea only, but to the child that has a sour body, for the lack of sufficient exerci may interfere sadly with its full grow and development.

WHAT young boys smoking, singly in groups, are working with eith mind or body? Usually the physical loafing, forming slouchy habits ar being generally ill used; the mind loafing also, if not busy with impu thoughts. The slouching and slumpi of the frame and tissue has its effe upon the internal organs and interfer with normal functioning and throug the lack of normal secretion and elimi ation, the general metabolism is distur ed and gradually the condition becom bad enough to call the child ill. Is not now too late to take time to thin especially so when the brain power h lost as well as the physical, lost tir and opportunity for storing away a retaining useful knowledge, lost power of concentration and greatly lo in self respect? Many a girl's mind directed or allowed to drift into hab of dress, carriage and thought th have a deteriorating effect physical mentally and morally.

We need then to develop the wo that is truly constructive and educatio al, that of training the intellect mind properly to understand and ca for the body. The attitude toward t body is generally that of making obey the dictates of the will witho any thought of the results either phy cal or mental; this idea must not allowed to have any place in the gro ing mind of the child. Teach the ch before it is ten years old a prop reverence and respect for its body as temple for powers that God has plac in it above the animal world, and h daily to care for and govern it, and o moral problems will be greatly lesse ed; also the physical and mental vig and endurance will steadily increase.

HE UNITED WOMEN VOTERS' PLATFORM

QUALITY for men and women, politically and socially.

Absolute recognition of women by the overnment.

Equal pay for equal work.

Equal marriage laws, including equal onditions of divorce.

Equality of parental right as beween mother and father, the interest f the child in every case to be supreme.

The age of consent to be raised, so hat the girl's person is as fully proected as her property.

Equal opportunity of employment.

The community to guarantee, where ecessary, to the expectant and nursing nother the food and other conditions reuired to enable the bearing and rearing f healthy children. Financial contriution to be made by both parents as nay be reasonable, having regard to the acts of each individual case.

The father of an illegitimate child to e held responsible for the financial support of the child.

Every child to be guaranteed by the community from its birth until it becomes a fully-grown and self-supporting member of society, the material conditions of life, the medical supervision and treatment, and the general education followed by specialized education necessary to render the child a worthy citizen.

That provision he made through extension of the school system for the Canadianization of foreign population.

Dominion laws to be so amended as to make it possible for a married woman to be naturalized in her own qualification.

Women to be on every housing committee. Abolition of capital punishment. Allowance to be made to wives and families of men incarcerated in jails or penitentiaries.

In regard to criminal courts it was suggested there should be women on juries, women magistrates, women governors to have control of women's prisons, women police, women wardresses constantly on duty in every police court and in sole charge of all women prisoners, and women doctors in medical charge of all women prisoners.

A CORRECTION

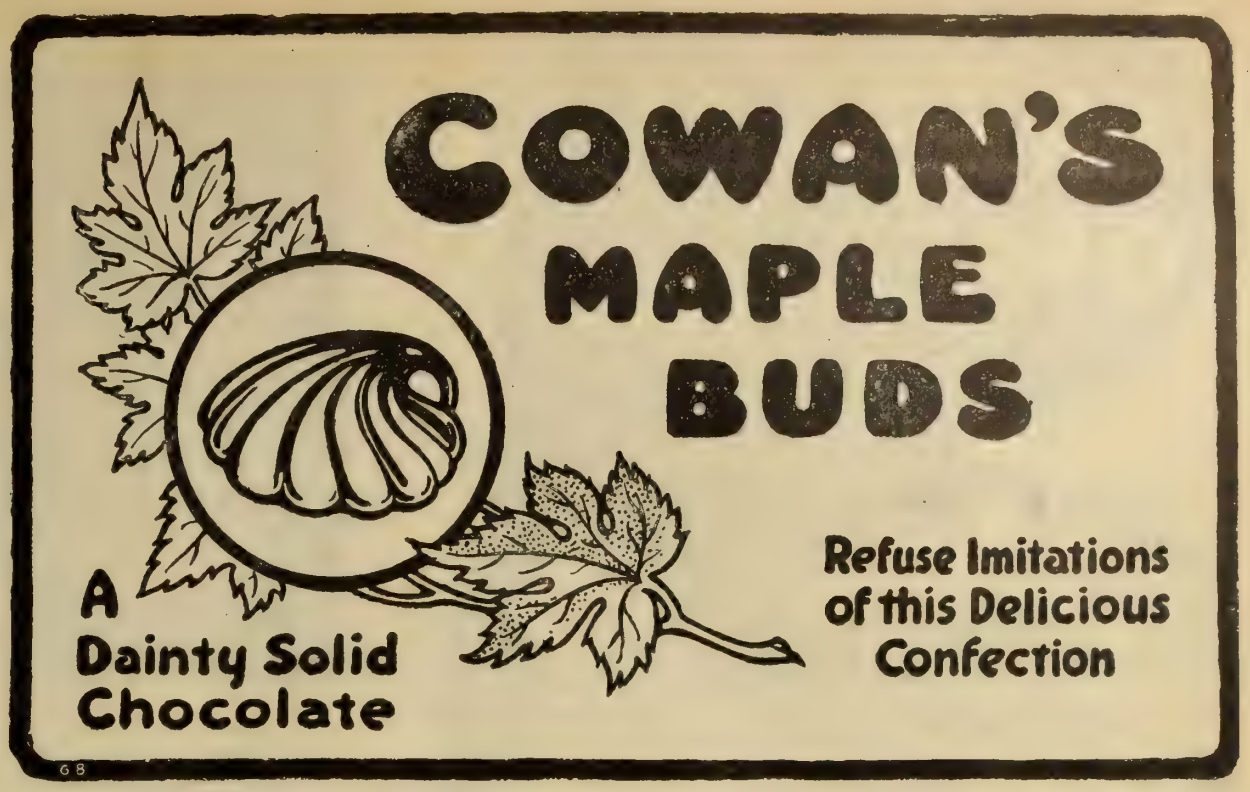
In our May fifteenth issue in quoting Mrs. Edith Lang on the subject of women who may vote, we said that a farmer's daughter could vote in a municipal election provided her father had the necessary property or income qualifications. This was an error. Only a farmer's son can vote on his father's property.

COLD-PACK CANNING AT HOME

Continued from page 43

placing on rubber and top, shaking well and then turning upside down; there should be no leaking for the first few seconds. As we occasionally find a jar with a flaw in the top, on account of which it can never be made air-tight even by using two rubbers, this precaution may save a lot of time and annoyance later. It is also important to use only fresh sound fruit or vegetables for canning. Those which are overripe are likely to harbor mold spores which ordinary boiling will not kill.

Another process which has an important part in preventing fruit and vegetables spoiling in the cans is the blanching and cold dipping. This merely means immersing the vegetables in boiling water for a few minutes, then removing and plunging them in and out of cold water. Besides killing certain troublesome mold spores which straight boiling would not touch, this treatment gets rid of objectionable acid or acrid flavors, and in the case of vegetable greens, string beans, asparagus, etc. reduces their bulk and makes them pliable and easy to pack in the jars.



A Live Girls' Club

In April 1915, some girls of Barrie, Ontario, started a Soldiers' Aid Club. It began with a membership of fourteen, which before the war ended had grown to eighty-five. During that time the girls raised $9,000 for the Red Cross and other soldiers' aid purposes. They had tag days and teas; for a while they served Saturday noon lunches at a "Red Cross Shop" for the business people from the town and as one girl said, "As we brought everything from home except the meat and milk and bread, our profits were high." While the soldiers were at Camp Borden, twe ve miles from Barrie, the club held dances regularly in town. When the Duke and Duchess of Devonshire visited Barrie, the people took advantage of the event to arrange a Garden Party, at which the Club through booths of their own raised one hundred dollars. The photograph was taken when the girls were dressed up to act as ushers at a concert given for the Prisoners of War benefit. . . . . Now that the war is over a company of girls with such resourcefulness and initiative turned into other channels could do some valuable reconstruction work in their own community.

Cupid in the Machine

By J. L. STEWART

"NO sir-ree"—said the widder, emphatic like—"no sir-ree. Maggie an' me get along fine in separate houses but we'd fight like all get out livin' in one. That girl's run your house ever since she was fifteen and her mother died an' s'long as she's home she's a-goin' to run it without any stepma around."

"Well looka here"—I says, says I—"that's tough on me—what am I a goin' to do?"

"Get her married," says she.

"Easy sayin'—who to?" says I.

"Joe Holt," says she. "Joe Holt's just cut out for Mag. Livin' alone on the next farm an' all. A steadier boy there never was, though backward and shy. He'll need a little encouraging, that's all."

"I'll do it," says I.

So next night, casual like, bein' Sunday, I asks Joe over for supper. Joe certain eat real hearty but outside of "Yes please—I believe I will," etcetery—didn't talk much an' acted shyer than a year old colt. Weren't no show of love-makin' whatsoever.

Left 'em alone while I did the chores an' I'm doggone if when I come back they weren't sittin' on opposite sides of the kitchen speechless like, and Joe up and went home soon as I said I was goin' out to see a man about a cow.

When I got to the widder's I was feelin' kinda down. "Belle," says I, I says, "I've brung them two young souls together but how in time am I goin' to unite 'em, I dunno. That bird Cupid don't seem to be a hoverin' in the air nowhere."

"Lan' sakes," said the widder, "give 'em some mutual interest—somethin' they can do together. Buy 'em a hammick an' one of them phonygraphs an' you'll find Cupid a roostin' somewhere in the vicinity."

Knowin' Joe had allus had a hankerin' for music, and likewise Mag too, I went to town next day and bought a hammick with green an' yeller and blue stripes an' a real swell lookin' phonygraph with a lot of tunes for it an' I put em all out on the porch by the lilac bush. "Mag," I says, says I, "I've brung you a phonygraph and a hammick an' seein' we don't know how to run the contraption I'd better ask that feller Joe Holt over to show us."

Joe came real willin' and he and Mag worked the thing all evenin'. Next night Joe turned up again and brung some new tunes he'd went to town an' got—songs in some foreign language without no sense to it, that he said was grand opery. An' they seemed to pick on those tunes and did 'em over an' over until my old head ached. This went on regular from hayin' to harvest an' every night Joe would drop over accident like and they'd play those dago tunes. But Mag still sat alone in the hammick and Joe on the edge of the stoop and there weren't no love-makin' apparent.

Fin'lly one night my corns bein' bad and the kitchen hot, and' me listnen' for three hours to an ill trova tore or somethin' I got desprut and hollered mad like and loud: "Mag, stop that damn noise, stop it I say." The machine stopped with a squeak an' I heard Mag sniffle (Mag bein' a woman cries easy). Things were kind a quiet for a minute an' then I'm a son of a gun if I didn't hear a smack—yes sir—a genuine kissin' smack. I tiptoed in my stockins to the door an' by jinks that backward young beggar had one arm round Mag and was usin' the other hand to hold her chin so he could kiss her tears away.

"What's this mean, young man?" I says severe.

"It means I'm going to marry Maggie first of September an' take her away from here," says he, cross and bold.

"Just a minute, just a minute," says I excited an' I went in an' called up the widder. "Belle," says I, "that young devil of a Joe Holt is goin' to marry my only daughter September first—will you get hitched the day after?"

"I will not," says she, "I'll marry you next week an' help the poor child get ready."

"I'll be over immediate," says I.

Goin' out I gazed kind at the two young things in the hammick—"Sal-right, Mag," says I, "I'm going to see your future ma and you can have Cupid an' the red cow for a wedding present."

"Cupid?" says they.

"Cupid," says I, "Cupid in the machine."

THE ROMANCE OF GIRL GUIDING

Continued from page 11

for basket-weaving, a basket-worker's badge; for bee-farming, a badge with the sign of a beehive; for learning to manage a boat, tie knots in rope, swim fifty yards, and know the flags of the Merchant Service and those of the new International code of signals, the boatswain's badge bearing an anchor; for simple carpentry, repairing and making some useful articles of furniture, a carpenter's badge with the sign of a brace and bit; for child nursing or mothercraft, knowing the general rules for the care of the baby, having bathed and dressed a baby two years old, being able to tell a fairy tale and for kindred accomplishments, is awarded a badge bearing a cross slightly different from that on the ambulance badge. Badges with special signs are awarded for other achievements. The quill and folio indicate accomplishment in clerical and simple business work; a broiler is the sign for cooking; a cycle wheel shows that the girl owns a bicycle in good working order which she is willing to use in the King's service if called upon at any time in case of emergency. A sickle is the sign on the dairymaid's badge, indicating that the girl can milk a cow, make butter, and understands the care and preparation of poultry for market. For dress-making, her badge bears a pair of scissors; for skill as an electrician, an arrow mark; as an entertainer, a comedy face; as a laundress, a flat-iron; as a trained member of a fire-brigade, a flame; a friend to animals, a horse shoe; for aviation, an aeroplane; for gardening, a daisy; for geology, a pick and shovel; for gymnasium work, a pair of dumb-bells. Following the same idea, special badges are awarded when the girl has passed the Guide examination and proved herself proficient as a horsewoman, housekeeper, interpreter, knitter, milliner, musician, naturalist, pathfinder, having a general knowledge of the district so as to be able to guide strangers, and having some knowledge of the history of the place and any buildings of historical interest, photographer, pioneer, rifle-shot, sick nurse, signaller, surveyor, swimmer, telegraphist.

The senior Guides, or girls of eighteen or twenty years or older, begin to specialize more in the study of citizenship, art and literature, nature lore, physical training and homecraft. Before the girl wins her citizen's badge she must have done acts of voluntary service in her community, understand the present basis of the Parliamentary vote and the responsibility it implies, with the general principles of local Government and the duties incumbent upon women in respect to the Municipal vote, and she must be able to make a fine minutes' extempore speech or write an essay on any subject connected with citizenship, set by the examiner, five minutes grace being given for training her ideas. To cultivate a taste for art and literature, the girls may be taken to picture galleries and concerts, and every company may form its own library.

During the war the Girl Guides rendered invaluable service in the innumerable ways that an organization of such broad scope could do. In Great Britain they put themselves unreservedly at the service of the Red Cross and other war departments and in addition raised money for relief purposes *entirely by their own earning.* This is one of their rules. Guides are not allowed to solicit money either for the company funds or any other purpose—and it naturally contributes to their spirit of independence and resourcefulness. And every girl, and every woman interested in girls, knows that the spirit of independence and resourcefulness and helpfulness and general reaching toward a broader, better womanhood is needed perhaps more to-day than ever during the last five years.

GOOD WORDS FOR CHARADE GAMES

Good words to be acted in a charade game are:

Aeroplane	Air-oh-plane
Antarctic	Aunt-ark-tick
Buccaneer	Buck-can-ear
Charlatan	Char-lay-tan
Falcon	Fall-con
Handicap	Hand-eye-cap
Handkerchief	Hand-cur-chief
Microscope	My-crow-scope
Automobile	Ought-oh-mob-eel
Pilgrimage	Pill-grim-age
Sausage	Saw-sage
Stiletto	Still-let-toe
Bandage	Band-age
Stationary	Station-airy
Feline	Fee-line
Rainbow	Reign-beau
Bookworm	Book-worm
Handsome	Hand-some
Penitent	Pen-eye-tent
Cribbage	Crib-age
Broomstick	Broom-stick
Infancy	In-fan-sea
Hornpipe	Horn-pipe
Eyelash	I-lash
Forswear	Four-swear
Masquerade	Mass-cur-aid
Melancholy	Melon-collie
Pantry	Pan-tree
Tennessee	Ten-I-see
Antidote	Aunt-I-dote
Definite	Deaf-in-ate

GREAT HEART

By Anna Blake Mezquida

You smiling lived, and smiling went away!
Great heart, you would be sad were we to pay
In tears our tribute. We would wreathe your grave
With joy, and write the happiness you gave:

The laughter of a little orphan lad
You lifted from the wayside and made glad;
The girl you started on the upward road:
The toiler whom you helped to bear the load;

The works you wrought in silence; gifts you made
Because you loved—not for the world's parade;
The torch of learning that you set alight
To blaze a way through ignorance and night;

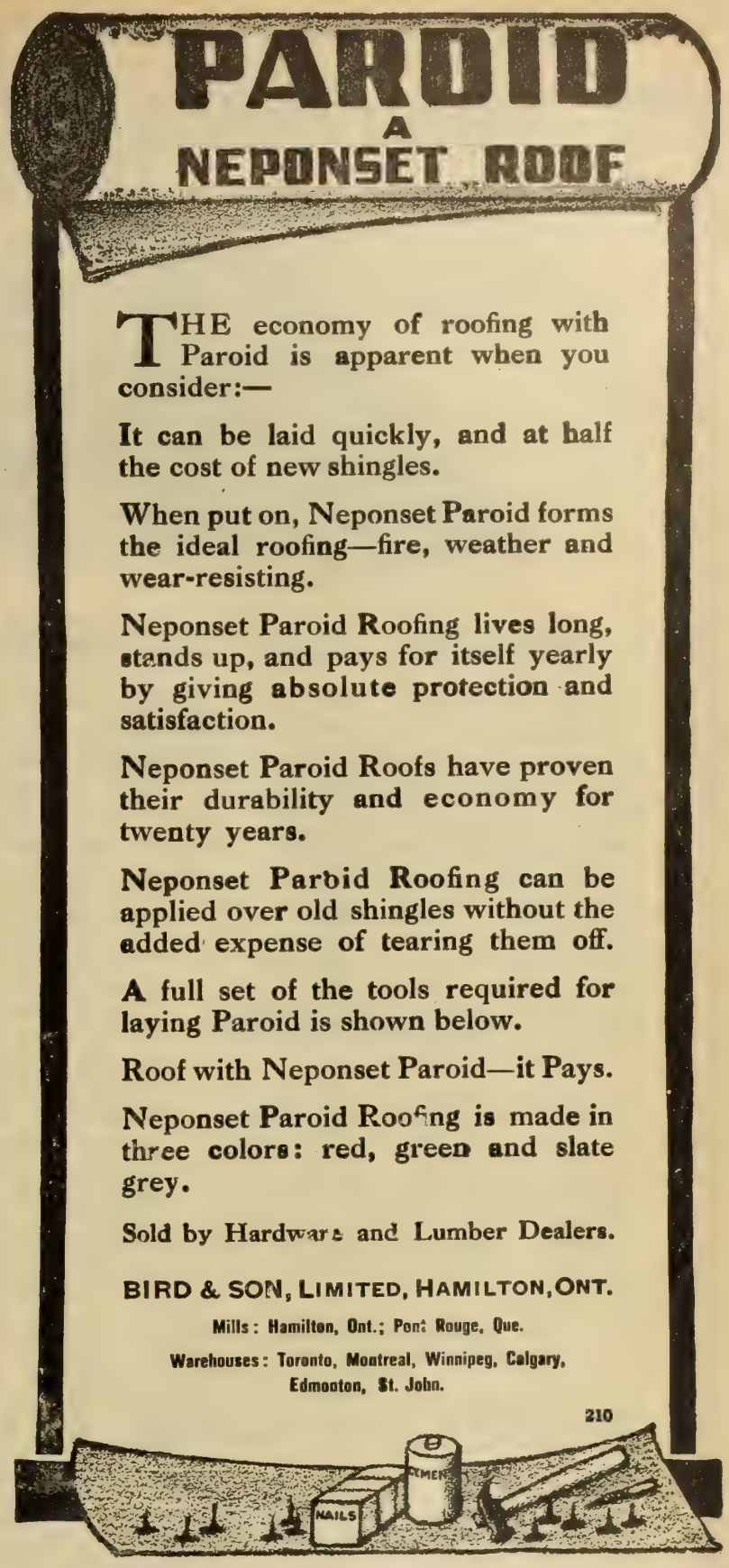
The counsels that you offered, thoughtful, wise;
The kindliness that looked out from your eyes;
The courage and the mighty power of good
You taught to Youth by your own white manhood—

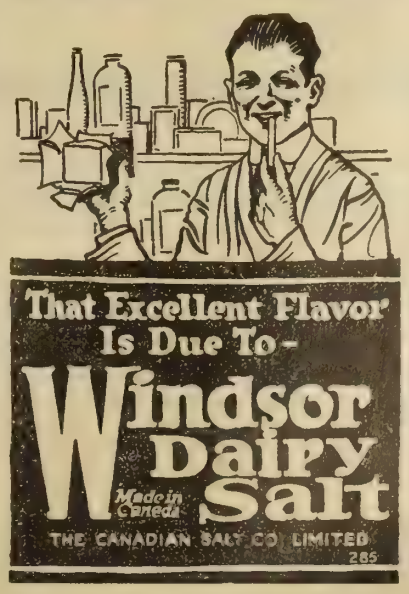
These pay you greater homage than our tears;
These live beyond your own brief span of years.
Dear friend, dear friend, the selfless path you trod
Has marked for us the starlit trail to God!

—In "Good Housekeeping."

It will be time well spent, in addition to screening the house, and removing as far as possible every cause for bringing flies around the place, to put a fly swatter in every room and to train every member of the family in the use of it.

The fly that lives to fly away
May live to breed a million
a day.





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Western Distributor: Shell Supply Co., 509 McGreevy Bldg., Winnipeg.
Exclusive representatives wanted for counties and townships.

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Making Hay the Modern Way

To get the most and the best hay you must use modern Hay-Making Implements. The time for getting in the hay is short, as the quality depends on the quickness and eveness of the curing, and the probability of bad weather makes it necessary to do the work without losing any time. By using Massey-Harris Implements in Haying you can harvest your hay in the best condition, without undue haste.

The Massey-Harris Mower is strong and well built, runs easy and has no side draft, is easy to handle, cuts clean, and goes right through haying without a hitch. It can be had in 3½, 4, 4½, 5, 6 and 7 ft. cut. If you are not acquainted with it, lose no time in getting further information.

Side Delivery Rake and Tedder—Here is a machine that does the work of two machines, and saves the cost of one, also the storage space required, and the time hitching and unhitching when changing from Tedding to Raking. Materials and construction are the usual high quality of the Massey-Harris line.

The Massey-Harris No. 3 Steel Rake is a light but very strong Rake, well adaped for raking light or heavy hay, can be dumped by the hand or by the Automatic Dump operated by foot.

Massey-Harris Tedder built entirely of Steel, Forks have a quick and positive action, and the Fork working outside each Wheel assures all the hay being thoroughly tedded.

Massey-Harris Hay Loaders, either Cylinder or Rake Bar. Strong and well-built, simple in construction and not liable to get out of order. The motion is steady and constant, and it yields automatically to any obstruction or unusual volume of hay.

Send for Descriptive Circular of Modern Hay Tools.

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$25 Single Harness $25

A set of exceptionally strong single harness with breast collar, used only three months. Owner has no further use for them as he has purchased an automobile. Apply

BOX 220, FARMERS' MAGAZINE

143 University Ave. - - Toronto

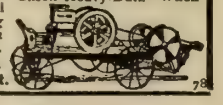
Make Money This Winter—Saw Wood

There is big money this winter sawing wood. Coal is high. Wood will be scarce. Now is the time to clean up. The

GILSON HEAVI-DUTI SAWING OUTFIT

is the machine to do it with. Makes its own spark without the aid of batteries. You cannot afford to buy any engine until you know all about the Gilson Heavy-Duti. When you know about it, you will not buy any other. Catalog and information free if you act quickly. Write to-day.

GILSON MFG. CO., Ltd.
7815 York St. **GUELPH, Ont.**



Concrete Machinery for the Farm

Hand cement mixer pays for itself in 7 days. Write for Special Offers. Crushers, Brick, Block, Tile Machines, Power Mixers, etc. New and Second Hand Gas Engines.

WETTLAUFER BROTHERS, Limited, 178A Spadina Ave., Toronto.

THE FARM CHICKEN IS ROOSTING HIGH

Continued from page 7

a few days before death butterfat or egg yolk is again supplied to the ration the animal will start development, the eye trouble will disappear, and if the injury to the eye has not progressed too far the animal will soon resume normal appearance and function.

The second dietary essential is found in the tender leafy growth of plants. Nothing will happen to their eyes, as in the former instance, but in the course of a few weeks or even a shorter period it will be noticed that they drag their hind legs, and unless the condition is corrected death is pretty sure to follow in a short time. This condition can be avoided and corrected, if taken early enough, by the feeding of a liberal amount of leaves, especially thin leaves, such as alfalfa, clover, celery tops, and so forth. The application of these findings to successful poultry raising is definite and easy.

Applying the results of these interesting discoveries to the practice of feeding growing poultry, we find the following products must be given special prominence in the diet: No effort should ever be made to raise chickens unless they can run over an extensive range on which an abundance of green feed is growing. In addition, the growing chickens should be fed liberal quantities of milk or milk by-products. Infertile eggs from the incubators can well be boiled and fed to the chicks during their early growing period. The inclusion of all these three products will insure vigorous, healthy, well-grown pullets which will develop their inherited traits and become productive, profitable adults.

The average farm affords chances for fowl to secure, in green plants, worms, bugs and table scraps the feeds that have to be purchased by the intensive producer.

Where it is impossible to provide such a large permanent range, it is frequently necessary to plow and reseed the ranges each year in order to keep them in a sanitary condition and in order to provide growth of greens necessary. When such practice is necessary it is well to divide the range into two or three equal areas, growing the winter cover crop of rye or wheat on one. The colony houses are best located on this plot, so that the chicks can be let out early in the spring on green pasture.

Adjacent to this area peas and oats may be seeded early, providing spring greens in abundance. The balance of such small range areas can well be seeded to rape, which will provide a continuous supply of succulence through the summer.

Milk products are essential because they provide another dietary property without which proper growth cannot be maintained. Skim milk is probably the best. It contains a limited amount of fat and much casein. Buttermilk is probably equally as good. In the absence of these two milk products there are a number of by-products which are available.

The question which will be asked by most feeders is the relative advantages of liquid vs. dry-milk products and the advantages of sour vs. sweet milk, says Harry R. Lewis, whose poultry work is advertised in FARMERS' MAGAZINE. It can be said without hesitation that the liquid milk is probably superior to the dry powder, especially when feeding very young chicks. They seem to relish it better and it has a stimulating effect upon their appetites.

It is generally recognized that sour milk is superior to the sweet for two reasons: First, because the sour product, containing lactic acid, is slightly more palatable and acts as an internal disinfectant, cleaning the digestive tract and killing certain undesirable types of bacteria. Sour milk has been found by actual tests at many experiment stations to be more easily and completely digested than sweet milk.

A good dry mash for chickens is made of 3 parts by weight of wheat bran to one part each of wheat middlings, ground oats, corn meal, gluten feed, meat scrap, and dried buttermilk.

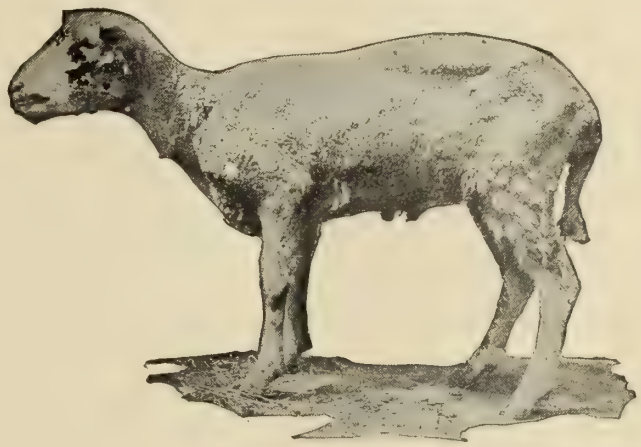
Improve the Quality —Then Increase the Quantity

SHEEP have made big returns during the last few years and will CONTINUE to give big returns if the maximum production at the minimum cost is obtained. To get maximum returns at minimum cost it is necessary to produce A1 lamb, mutton and wool.

Requirements for A1 Lamb and Wool

1. Use pure bred rams.
2. Castrate and dock the lambs.
3. Grow summer pasture crops.
4. Finish lambs before selling.
5. Keep fleeces free from chaff.
6. Tie fleeces with paper twine.
7. Keep tags and black wool separate.

To get the best market returns sell lambs, sheep and wool through the local or provincial co-operative associations.



A scrub ram
His greatest fault—he lived too long.

In a law court last year a judge gave the decision that each lamb out of a pure bred ewe by a pure bred ram was worth $26 more than if a scrub ram had sired it.

Have no fear of over-supplying the home market. In 1918, $42,000,000.00 worth of wool and its manufactures were imported into Canada.

In 1918, over 4,000,000 pounds of frozen Australasian lamb and mutton were consumed in Canada.

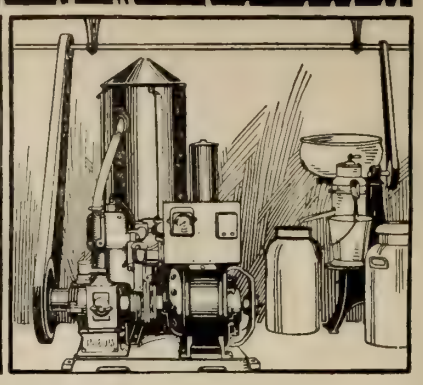
The Dominion of Canada Department of Agriculture, through the sheep and goat division, announces a new policy to demonstrate to every sheepraiser on his own farm the value of the PURE BRED RAM. Sheepraisers who have never used a pure bred sire and purchase one for their flocks this year will be given a premium of $5.00 annually for two years. Write the Chief, Sheep and Goat Division for further particulars.

A Directory of Breeders, Pamphlets on the production of A1 lambs and wool and all branches of sheep-raising will be sent free of charge to all who write the Chief, Sheep and Goat Division, Live Stock Branch, Ottawa. They are yours for the writing.

Live Stock Branch

Dominion of Canada Department of Agriculture

OTTAWA CANADA



Electric Light - Running Water - Power

Why Shouldn't You Have Every Modern Comfort in Your Home?

JUST because your business of farming keeps you in the country there is no reason why your family should not have the brightness, cleanliness and convenience of electric light such as folks in the city enjoy!

To-day your business is prosperous. It is bringing you a fair return. Your home should be in keeping with your prosperity.

A Blaze of SAFE, Brilliant Light—Wherever You Need It

Think what a difference it would make to your HOME if you had light **at the turn of a switch**—wherever you wanted it.

What a difference the PHELPS Electric Light and Power Plant would make to your wife's work if she had a bright, convenient light in the kitchen! If she had switch at the top of the cellar steps that would flood the cellar with light instantly! If she had GOOD light in the back shed! If she had an electric iron and

Wouldn't meals look better, taste better, with a bright, cheerful glow over the dining-room table? Wouldn't she be tickled to have good light that would enable her to do sewing and darning in the evenings? Wouldn't it be a wonderful convenience to get rid of carrying that dangerous oil-lamp upstairs and have a switch that would light all your bedrooms brilliantly?

How much better for the children's eyes it would be if you had electric light for them to read and study by—without crowding around a dim, awkward oil-lamp.

And all this without the dirty, smelly, time-killing task of cleaning oil-lamps!

Electricity Will Help You Do More Work in Less Time

The PHELPS Electric Plant will not only make your home a better home to live in, will not only add hundreds of dollars to the value of your farm, but it will actually help you make more money out of farming.

Figure what a difference it would make to your own work to have SAFE, bright electric light in the stables! Wouldn't it save you hours of time in a twelvemonth? Anywhere in the stable—even up in the hay-loft or silo!

Think of the convenience of turning a switch in the house that would light your yard, your drive-shed, or garage, your outhouse, your lane!

In short, the PHELPS will give you light wherever and whenever you want. You own your own lighting plant. You own a plant BIG enough to give you 75 good lights! You can have your whole farm blazing with brilliant light if you want it.

Use the Phelps for ELECTRIC Power or Like a Gas-Engine

Wherever there is crank to turn—cream separator, churn, feed-chopper, saw, grindstone, washing-machine—you'll save time with electric POWER. You'll get rid of many a back-breaking job!

The PHELPS plant will give you electric power anywhere on your place—by simply pressing a button.

It will also give you DIRECT Power. The PHELPS has an exclusive feature—a big POWER-PULLEY. Hitch a belt onto this pulley and you can use the sturdy, dependable engine—a 4 horsepower gas engine—saving your batteries and fuel.

Running Water—HOT Water

Besides giving you the comfort of electric light, besides giving you the convenience of electric power, the PHELPS will enable you to have RUNNING WATER—anywhere on your place—the biggest city convenience!

By hitching it to our WESTCO Automatic Pump you can get rid COMPLETELY of the old back-breaking pump.

You can have running water—fresh, cool water—for your stock, and save hours of time in doing chores.

Your wife can even have **hot** water in the house for all house-work.

After hot, tiring days in the fields you can come in and have a bath—a real bath—that will make you feel like a new man. By simply turning a tap!

As much water as you want—the Westco gives you 200 gallons of water an hour. Automatically.

Runs from a ¼ h.p. motor. Dependable with an electric system; but especially with the PHELPS. No trouble to look after it—the Westco runs itself.

Take the Step That Will Change Your Whole Life

Let's tell **you** about electric plants. Let's tell you all about the Phelps plant—the only electric plant on the market that is really BIG enough and simple enough for farm service.

Think what it would mean in time, money and comfort to have electric light and power on your place at the turn of a switch—running water by simply turning the tap!

Sit down now and send the letter that will change your whole life! Get the FACTS! We've some well-illustrated. factful literature ready for you. Sent FREE by return mail. Write for it. TODAY. Here's a coupon.

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